



# County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

September 26, 2022

Ms. Anna M. Tuthill  
Regional MS4 Coordinator-Inspector  
Virginia Department of Environmental Quality, Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

Reference: 2022 Municipal Separate Storm Sewer System Program Plan and Annual Report for  
Virginia Stormwater Management Program Permit No. VA0088587

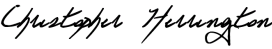
Dear Ms. Tuthill:

The 2022 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report for Virginia Stormwater Management Program (VSMP) Permit No. VA0088587 is enclosed. As required by Part I.E.1 of the permit, this report covers the period from July 1, 2021, through June 30, 2022, and describes the continued activities performed to satisfy the County's permit requirements, as well as updates needed to satisfy new requirements. In order to facilitate tracking of the updated program plan elements and associated reporting requirements, the Annual Report and Program Plan have been combined into a single document that includes the permit language, the County's Program Plan, the permit reporting requirements and the County's Annual Report on each requirement.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or require additional information regarding this report, please contact Martin Hurd, MS4 Program Coordinator, Stormwater Planning Division at 703-324-5500.

Sincerely,

DocuSigned by:  
  
B67971E9F026404  
Christopher Herrington  
Director

Enclosures: Annual Report

cc: Eleanor Ku Coddling, Deputy Director, Department of Public Works and Environmental Services (DPWES), Stormwater and Wastewater Divisions  
Craig Carinci, Director, DPWES, Stormwater Planning Division

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# Fairfax County, Virginia 2022 Municipal Separate Storm Sewer System (MS4) Program Plan and Annual Report

September 30, 2022

Reporting Period: July 1, 2021 through June 30, 2022



Permit No: VA0088587  
Effective Date: April 1, 2015  
Expiration Date: March 31, 2020  
(Administratively Continued)



*Photos on cover (from top left): Outfall Restoration; Stream Restoration; Inlet; Stormy the Raindrop; Secondary Containment; Erosion & Sediment Inspection; Stream Restoration.*

*(Photo Credit Fairfax County)*

Report prepared and compiled by:  
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[www.fairfaxcounty.gov/dpwes/stormwater](http://www.fairfaxcounty.gov/dpwes/stormwater)  
September 30, 2022



To request this information in an alternate format call 703-324-5500, TTY 711.

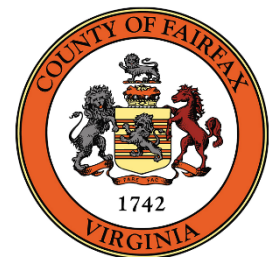
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**Fairfax County, Virginia**  
**2022 Municipal Separate Storm Sewer System (MS4)**  
**Program Plan and Annual Report**  
**September 30, 2022**

VSMP Permit No: VA0088587  
Effective Date: April 1, 2015  
Expiration Date: March 31, 2020  
Administratively Continued  
Reporting Period: July 1, 2021 through June 30, 2022



# 2022 MS4 Program Plan and Annual Report

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## INTRODUCTION

The following Municipal Separate Storm Sewer System (MS4) combined Program Plan update and Annual Report is submitted to the Virginia Department of Environmental Quality (DEQ) in compliance with Fairfax County’s Virginia Stormwater Management Program (VSMP) MS4 permit (VA0088587). The permit was reissued on April 1, 2015 and shifted the reporting period from a calendar year to a fiscal year reporting cycle. As required by Part I.E.1) of the permit, this report covers the period from July 1, 2021 through June 30, 2022 and describes the continued activities performed to satisfy the county’s permit requirements, as well as updates needed to satisfy new requirements. The county is currently operating under an administrative continuance of the existing permit in anticipation of permit renewal. Program Plan modifications are identified by their due date in the Permit Year columns.

In order to facilitate tracking of the updated Program Plan elements and associated reporting requirements, the Annual Report and Program Plan have been combined into a single document that includes the permit language, the county’s Program Plan, the permit reporting requirements and the county’s Annual Report on each requirement. The combined MS4 Program Plan and Annual Report is presented as a table that can be navigated using the MS4 Action ID assigned to each reporting requirement. This approach has multiple benefits including ensuring that all permit requirements are addressed, facilitating update of the Program Plan in conjunction with each Annual Report, and simplifying regulatory review by including all of the information relevant to each requirement in one place. The table contains the following columns:

Column Heading	Content
<b>MS4 Action ID:</b>	This column follows the structure of Part I of the permit and assigns an ID to each permit requirement. In some cases, permit sections that include multiple requirements have been broken out into separate MS4 Action IDs for clarity.
<b>Permit Requirement:</b>	This column contains the language as it appears in each section of the permit. <i>Permit language is shown in italics.</i>
<b>Responsible Party:</b>	This column identifies the department, division or subdivision responsible for maintaining compliance with each permit requirement.
<b>2022 Program Plan Elements:</b>	This column describes the county’s program for compliance with each permit requirement for the 2022 reporting period. Where the program description or supporting materials do not fit in the table, they are included as a numbered appendix beginning with the letter “P” for Program Plan.
<b>Permit Year:</b>	This column is a group of five smaller columns (one for each year of the permit) and is used to visually highlight specific due dates (in green) and to identify the annual timeline for implementation of individual actions (in blue). When an action is not implemented during a specific year, the column is shaded in gray.
<b>Specific Reporting Requirement:</b>	Like the “Permit Requirement” column, this column contains the language for each specific reporting requirement that appears in the permit. Where there is no specific reporting requirement, the column is shaded gray. <i>Permit language is shown in italics.</i>
<b>2022 Annual Report:</b>	This column contains a report on the activities performed to comply with each permit requirement. Where the reported activities or supporting materials do not fit in the table, they are included as a numbered appendix beginning with the letter “R” for Annual Report. Where reporting on an action is not required during the reporting period, the column is shaded in gray.



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
A.1.b.4.	Materials from a spill are not authorized unless the discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage. The permittee shall take, or require the responsible party to take, all reasonable steps to minimize or prevent any adverse effect on human health or the environment in accordance with the permittee's program under Part I.B.2.f). (Spill Prevention and Response). This state permit does not transfer liability for a spill itself from the party(ies) responsible for the spill to the permittee nor relieve the party(ies) responsible for a spill from the reporting requirements of 40 CFR Part 117 and 40 CFR Part 302. The permittee is responsible for any reporting requirement listed under Part II.G of this state permit.									
<b>A.2. Permittee Responsibilities</b>										
A.2.	This state permit establishes the specific requirements applicable to the permittee for the term of this state permit. The permittee is responsible for compliance with this state permit. The permittee shall implement and update the MS4 Program Plan (as set forth in Part I.B) to ensure compliance with this state permit. The Department has determined that implementation of the MS4 Program Plan reduces the discharge of pollutants to the maximum extent practicable. Where wasteloads have been allocated for pollutant(s) of concern in an approved Total Maximum Daily Load (TMDL), the permittee shall implement the special conditions as set forth in Part I.D of this state permit. Compliance with the requirements of this state permit shall also constitute adequate progress for this permit term towards complying with the assumptions and requirements of the applicable TMDL wasteload allocations such that the discharge does not cause or contribute to violations of the water quality standards.									
A.2-1.	The permittee shall clearly define the roles and responsibilities of each of the permittee's departments, divisions or subdivisions in maintaining permit compliance. If the permittee relies on another party to implement portions of the MS4 Program Plan, both parties must document the agreement in writing. The agreement shall be retained by the permittee with the MS4 Program Plan. Roles and responsibilities shall be updated as necessary. Where the permittee relies on another party to implement a portion of this state permit, responsibility for compliance with this state permit shall remain with the permittee.	SWPD	<ul style="list-style-type: none"> <li>Current roles and responsibilities, and responsible agencies, are described in the "Responsible Party" and "2021 Program Plan Elements" columns of this Program Plan. See Appendix P1 for the current list of responsible parties, their acronyms and the program elements that they implement.</li> <li>The county has written agreements with the following organizations to support implementation of portions of the MS4 Program Plan:               <ul style="list-style-type: none"> <li>Northern Virginia Soil and Water Conservation District (NVSWCD)</li> <li>Clean Fairfax Council</li> <li>Northern Virginia Regional Commission (NVRC) Clean Water Partners</li> <li>Fairfax County Park Authority (FCPA)</li> <li>Fairfax County Public Schools (FCPS)</li> </ul> </li> </ul>	▶	▶	▶	▶	▶	Each annual report shall include a current list of roles and responsibilities.	See the "Responsible Party" and "2022 Program Plan Elements" columns of this document, as well as Appendix P1, for the current list of responsible parties, their acronyms, and the program elements that they implement.



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
A.2-2.	In the event the permittee is unable to meet conditions of this state permit due to circumstances beyond the permittee's control, a written explanation of the circumstances that prevented permit compliance shall be submitted to the Department in the annual report. Circumstances beyond the permittee's control may include abnormal climatic conditions; weather conditions that make certain requirements unsafe or impracticable; or unavoidable equipment failures caused by weather conditions or other conditions beyond the reasonable control of the permittee (operator error and failure to properly maintain equipment are not conditions beyond the control of the permittee). The failure to provide adequate program funding, staffing or equipment maintenance shall not be an acceptable explanation for failure to meet permit conditions. The Board will determine, at its sole discretion, whether the reported information will result in an enforcement action. In addition, the permittee must report noncompliance which may adversely affect surface waters or endanger public health in accordance with Part II.I.	SWPD	If Fairfax County is unable to meet the conditions of this permit due to circumstances beyond its control, the county will provide a list of circumstances that prevented permit compliance.			Each annual report shall include a list of those circumstances of non-compliance outside of the permittee's control.	There were no circumstances of non-compliance beyond the county's control during the reporting period.
<b>A.3. Legal Authority</b>							
A.3.	The permittee shall maintain and utilize its legal authority authorized by the Commonwealth of Virginia to control discharges to and from the MS4 in the manner established by the specific requirements of this state permit. The legal authority shall enable the permittee to:						
A.3.a.	Control the contribution of pollutants to the MS4;	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	<ul style="list-style-type: none"> <li>The Stormwater Management Ordinance (Chapter 124), Erosion and Sediment Control Ordinance (Chapter 104), Fire Protection Ordinance (Chapter 62), Plumbing and Gas Provisions Ordinance (Chapter 65), Food and Food-Service Establishments Ordinance (Chapter 43.1), Health or Safety Menaces Ordinance (Chapter 46), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), and Solid Waste Management Ordinance (Chapter 109.1) provide the authority to prohibit illicit discharges and connections, as well as illegal dumping.</li> <li>These ordinances are available online at <a href="http://www.municode.com/library">www.municode.com/library</a> (search for Fairfax County) or at this weblink: <a href="#">Fairfax County - Code of Ordinances</a>.</li> </ul>				

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
A.3.b.	Prohibit illicit discharges to the MS4;	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	<ul style="list-style-type: none"> <li>The following ordinances provide authority to prohibit illicit discharges and connections, as well as illegal dumping. The Stormwater Management Ordinance (Chapter 124), Erosion and Sediment Control Ordinance (Chapter 104), Fire Protection Ordinance (Chapter 62), Plumbing and Gas Provisions Ordinance (Chapter 65), Food and Food-Service Establishments Ordinance (Chapter 43.1), Health or Safety Menaces Ordinance (Chapter 46), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), and Solid Waste Management Ordinance (Chapter 109.1).</li> <li>These ordinances are available online at <a href="http://www.municode.com/library">www.municode.com/library</a> (search for Fairfax County) or at this weblink: <a href="#">Fairfax County - Code of Ordinances</a>.</li> </ul>	▶	▶	▶	▶	▶		
A.3.c.	Control the discharge of spills and the dumping or disposal of materials other than stormwater (e.g. industrial and commercial wastes, trash, used motor vehicle fluids, leaf litter, grass clippings, animal wastes, etc.) into the MS4;	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	<ul style="list-style-type: none"> <li>The Stormwater Management Ordinance (Chapter 124), Erosion and Sediment Control Ordinance (Chapter 104), Fire Protection Ordinance (Chapter 62), Plumbing and Gas Provisions Ordinance (Chapter 65), Food and Food-Service Establishments Ordinance (Chapter 43.1), Health or Safety Menaces Ordinance (Chapter 46), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), and Solid Waste Management Ordinance (Chapter 109.1) provide the authority to control the discharge of spills and the dumping or disposal of materials other than stormwater into the MS4.</li> <li>These ordinances are available online at <a href="http://www.municode.com/library">www.municode.com/library</a> (search for Fairfax County) or at this weblink: <a href="#">Fairfax County - Code of Ordinances</a>.</li> </ul>	▶	▶	▶	▶	▶		

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
A.3.d.	Require compliance with conditions in ordinances, permits, contracts, inter-jurisdictional agreements, or orders; and	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	<p>The county has the authority to require compliance related to implementing the permit requirements, including but not limited to:</p> <ul style="list-style-type: none"> <li>• <u>Conditions in ordinances</u> (including permits and orders issued under ordinances): The county has authority as authorized by state law and as stated in local ordinances, including options for escalating enforcement steps as appropriate in the county's exercise of its enforcement discretion as the regulator of covered third party activities. Local enforcement authority includes:               <ul style="list-style-type: none"> <li>o Stormwater Management Ordinance (Chapter 124): see Article 8 – Violations and Penalties.</li> <li>o Erosion and Sediment Control Ordinance (Chapter 104): see § 104-1-12. - Penalties, Injunctions, and Other Legal Actions.</li> <li>o Fire Protection Ordinance(Chapter 62): see § 62-1-1. – Penalty: § 62-2-5. – Powers of arrest.</li> <li>o Plumbing and Gas Provisions Ordinance (Chapter 65): see Article 7. – Penalties.</li> <li>o Food and Food-Service Establishments Ordinance (Chapter 43.1): see Article 4 – Penalties; § 8-4 Inspection and Correction of Violations.</li> <li>o Health or Safety Menaces Ordinance (Chapter 46): see § 46-1-3 – Abatement of health or safety menaces.</li> <li>o Individual Sewage Disposal Facilities Ordinance (Chapter 68.1): see § 68.1-1-3. – Penalties.</li> <li>o Water Recreation Facilities Ordinance (Chapter 69.1): see § 69.1-1-22. – Penalties.</li> <li>o Solid Waste Management Ordinance(Chapter 109.1): see Article 9 – Enforcement.</li> </ul> </li> <li>• <u>Contracts and inter-jurisdictional agreements</u>: To the extent authorized by state law, the county has authority to enter into and carry out contracts and, in event of breach of any contract by a counterparty, to enforce such contracts according to the provisions thereof and by legal action for breach of contract in the county's discretion.</li> </ul>		<p>▶ ▶ ▶ ▶ ▶</p>		

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
A.3.e.	Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the MS4.	LDS (124, 104) DPWES (124, 65, 109.1); FRD (62); HD (43.1, 46, 68.1, 69.1)	The county has authority to conduct inspections/monitoring etc. related to implementing the permit requirements, including but not limited to: <ul style="list-style-type: none"> <li>Stormwater Management Ordinance (Chapter 124): see § 124-1-8. – Right of Entry; § 124-2-5. – Monitoring, Reports, Investigations, and Inspections; § 124-9-4 – Standards for Inspection of Industrial and Commercial Property Discharging to the county MS4.</li> <li>Erosion and Sediment Control Ordinance (Chapter 104): see § 104-1-5. – Monitoring and inspections.</li> <li>Fire Protection Ordinance(Chapter 62): see § 62-2-5 Powers of arrest (addresses investigation of environmental crimes).</li> <li>Food and Food-Service Establishments Ordinance (Chapter 43.1): see § 8-4 Inspection and Correction of Violations.; § 8-402.11. – Allowed at Reasonable Times after Due Notice.</li> <li>Health or Safety Menaces Ordinance (Chapter 46): see § 46-1-2 – Inspection for health or safety menaces.</li> <li>Individual Sewage Disposal Facilities Ordinance (Chapter 68.1): see § 68.1-2-3. – Inspection of individual sewage disposal systems by Administrative Authority.</li> <li>Water Recreation Facilities Ordinance (Chapter 69.1): see § 69.1-1-22. – Inspections.</li> </ul>	▶	▶	▶	▶	▶		
A.3-1.	The permittee shall review and update its ordinances and other legal authorities such as permits, orders, contracts, and inter-jurisdictional agreements as necessary to continue providing adequate legal authority to control discharges to and from the MS4.	SWPD	Fairfax County's current ordinances and other legal authorities provide adequate legal authority to control discharges to and from the MS4. Ordinances and other legal authorities will be reviewed annually as part of the Program Plan review.	▶	▶	▶	▶	▶		
<b>A.4. MS4 Program Resources</b>										
A.4.	The permittee shall submit to the Department a copy of each fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit. The permittee shall describe its method of funding the stormwater program with the copy of the fiscal year budget.	SWPD	The fiscal year's budget will be provided as required.	▶	▶	▶	▶	▶	A copy of the fiscal year's budget including its proposed capital and operation and maintenance expenditures necessary to accomplish the activities required by this state permit shall be submitted with each annual report.	In FY 2006 the Fairfax County Board of Supervisors dedicated the value of one penny of the real estate tax, or approximately \$20 million annually, to stormwater capital projects. As part of the FY 2010 Adopted Budget Plan, a new service district was created to support the stormwater management program, as authorized by §15.2-2400 <i>et seq.</i> of the Code of Virginia. As part of the FY 2022 budget, the Board of Supervisors did not change the stormwater service district levy, it will remain \$0.0325 (three and a quarter cents) per \$100 of assessed real estate value. The stormwater service district will generate approximately \$94 million in FY 2022 that will be dedicated to funding the entire stormwater management program. This includes both staff operating requirements and stormwater capital projects. A copy of the FY 2023 Fairfax County Adopted Budget Plan (Vol. 2), Stormwater Services Budget has been included in Appendix R1 and is available online at: <a href="https://www.fairfaxcounty.gov/budget/sites/budget/files/assets/documents/fy2023/adopted/volume2/40100.pdf">https://www.fairfaxcounty.gov/budget/sites/budget/files/assets/documents/fy2023/adopted/volume2/40100.pdf</a>

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)	
<b>A.5. Permit Maintenance Fees</b>								
A.5.	Permit maintenance fees shall be paid in accordance with Part XIII of the VSMP regulations (9 VAC 25-870-700 et seq.).	SWPD	The permit maintenance fee will be paid as required.	▶	▶	▶	Fairfax County's MS4 permit maintenance fee was paid with check number 2200591497 dated August 30, 2021.	
<b>A.6. MS4 Program Plan</b>								
A.6.	The permittee shall maintain, implement and enforce an MS4 Program Plan accurately documenting the MS4 Program including all additions, changes and modifications. For the purposes of this state permit, the MS4 Program Plan is considered a single document, but may actually consist of separate documents (e.g., dry weather screening plans, wet weather monitoring plans, TMDL Action Plans, annual reports). Policies, ordinances, strategies, checklists, watershed plans and other documents may be incorporated by reference provided the latest revision date is included in the MS4 Program Plan and all documents are available upon request. Specific reference shall be made to any ordinance more stringent than the Virginia Stormwater Management Act (§62.1-44.15:24 et seq.) and VSMP regulations (9 VAC 25-870 et seq.), the Virginia Erosion and Sediment Control Law (§ 62.1-44.15:51 et seq.) and Regulations (9 VAC 25-840 et seq.) and the Chesapeake Bay Preservation Act (§ 62.1-44.15:67 et seq.) and Chesapeake Bay Preservation Area Designation and Management Regulations (9 VAC 25-830 et seq). The MS4 Program Plan is an enforceable part of this state permit. Updates to the MS4 program plan shall be submitted to the Department for review and approval in accordance with the due dates established by this state permit. Updates to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department. The most recent MS4 Program Plan shall be posted on the permittee's website and provided in another location easily accessible to the public.	SWPD	<ul style="list-style-type: none"> <li>This document is Fairfax County's MS4 Program Plan, which has been developed to document the county's MS4 Program as it exists at the end of the second full year of this permit cycle.</li> <li>The county reserves its full discretion to modify this plan in accordance with applicable laws (including Virginia Code Titles 15.2 and 62.1), applicable regulations, and the terms of this permit.</li> <li>After submission to DEQ with the county's 2021 Annual Report, the MS4 Program Plan will be posted to the county's website.</li> <li>A hard copy of the MS4 Program Plan is available in the Virginia Room located on the second floor of the City of Fairfax Regional Library, 10360 North St, Fairfax, VA 22030.</li> <li>See MS4 Action ID B.2.j.4</li> </ul>	▶	▶	▶	<ul style="list-style-type: none"> <li>Utilizing the annual report due March 31, 2015 as a baseline, the permittee's annual report due October 1, 2016 under this state permit shall include the necessary updates to describe implementation of this MS4 Program Plan and meet the conditions described in this section.</li> </ul>	<p>Fairfax County's 2022 MS4 Program Plan is contained in the "Program Plan Elements" column of this document and is available to the public on the Fairfax County website at the following link: <a href="https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports">https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports</a></p> <ul style="list-style-type: none"> <li>A hardcopy of the 2022 MS4 Program Plan is located in the Virginia Room located on the second floor of the City of Fairfax Regional Library, 10360 North St, Fairfax, VA 22030.</li> <li>The county submitted an updated MS4 Program Plan (Reapplication Program Plan) on October 1, 2019 that included benchmarks and milestones for the next permit cycle as required in Part II.M of the permit. This Reapplication Program Plan included suggested changes to permit language for the next permit cycle and should be reviewed as part of permit reissuance.</li> </ul>
<b>A.7. MS4 Program Review and Updates</b>								
A.7.	MS4 Program Review: The permittee will review the current MS4 Program Plan annually, in conjunction with the preparation of the annual report required under Part I.E of this state permit.	SWPD	The MS4 Program Plan will be reviewed annually and updated as needed.	▶	▶	▶	<p>All modifications and proposed modifications shall be reported in accordance with this section of the permit.</p> <p>Fairfax County has reviewed the MS4 Program Plan in accordance with the requirements of the renewed permit. This review resulted in the following changes:</p> <ul style="list-style-type: none"> <li>Updated the Industrial High Risk Runoff SOP.</li> </ul>	
A.7.a.	MS4 Program Updates and Modifications: Modifications to the MS4 Program Plan are expected throughout the life of this state permit as part of the iterative process to reduce							



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
	<p><i>pollutant loading and protect water quality. As such, modifications made in accordance with this state permit as a result of the iterative process do not require modification of this state permit unless the Department determines the changes meet the criteria referenced in 9 VAC 25-870-630 or 9 VAC 25-870-650.</i></p> <p><i>Updates and modifications to the MS4 Program Plan may be made during the life of the permit in accordance with the following procedures:</i></p> <ol style="list-style-type: none"> <li><i>1) Adding (but not eliminating or replacing) components, controls, or requirements to the MS4 Program Plan may be made by the permittee at any time. Additions shall be reported as part of the annual report.</i></li> <li><i>2) Updates and modifications to specific standards and specifications, schedules, operating procedures, ordinances, manuals, checklists and other documents routinely evaluated and modified are authorized under this state permit provided that the updates and modifications are performed in a manner (i) that is consistent with the conditions of this state permit, (ii) that ensure public notice and participation requirements established in this state permit are followed, and (iii) that the updates and modifications are documented in the annual report.</i></li> <li><i>3) Replacing, or eliminating without replacement, any ineffective or infeasible strategies, policies and Best Management Practices (BMPs) specifically identified in this state permit with alternate strategies, policies and BMPs may be requested at any time. Such requests shall include the following:</i> <ol style="list-style-type: none"> <li><i>(a) An analysis of how and/or why the BMPs, strategies, or policies are ineffective or infeasible including information on whether the BMPs, strategies, or policies are cost prohibitive;</i></li> <li><i>(b) Expectations on the effectiveness of the replacement BMPs, strategies, or policies;</i></li> <li><i>(c) An analysis of how the replacement BMPs are expected to achieve the goals of the BMPs to be replaced;</i></li> <li><i>(d) A schedule for implementing the replacement BMPs, strategies and policies; and</i></li> <li><i>(e) An analysis of how the replacement strategies and policies are expected to improve the permittee's ability to meet the goals of the strategies and policies being replaced.</i></li> </ol> </li> </ol> <p><i>Requests or notifications shall be made in writing to the Department and signed in accordance with 9 VAC 25-870-370 of the VSMP regulations. Modification to the MS4 Program Plan shall become effective and enforceable upon written approval from the Department. Major</i></p>						

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
	<i>modifications to the MS4 Program Plan as defined in 9 VAC 25-870-10 may require that the permit be reopened and modified pursuant to 9 VAC 25-870-630.</i>						
<b>A.7.b.</b>	<p><b>MS4 Program Updates Requested by the Department of Environmental Quality:</b>  <i>In a manner and following procedures in accordance with the Virginia Administrative Processes Act, the VSMP regulations and other applicable State laws, statutes and regulations, the Department may request changes to the MS4 Program Plan to assure compliance with the statutory requirements of the Virginia Stormwater Management Act and associated regulations and to:</i></p> <ol style="list-style-type: none"> <li><i>1) Address impacts on receiving water quality caused by discharges from the MS4;</i></li> <li><i>2) Include more stringent requirements necessary to comply with new State or Federal statutory or regulatory requirements; or</i></li> <li><i>3) Include such other conditions necessary to comply with State or Federal statutory or regulatory requirements.</i></li> </ol> <p><i>Proposed changes requested by the Department shall be made in writing and set forth the basis for and objective of the modification as well as the proposed time schedule for the permittee to develop and implement the modification. The permittee may propose alternative program modifications and/or time schedules to meet the objective of the requested modification, but any such modifications are at the discretion of the Department.</i></p>						
	<b>B. STORMWATER MANAGEMENT</b> <i>The following subparts describe the requirements for the permittee to implement in its MS4 Program during this state permit term:</i>						
	<b>B.1. Planning</b>						

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline				Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)	
B.1-1.	No later than 12-months after the effective date of this state permit, the permittee shall submit to the Department a summary of potential stormwater management projects which may be selected from the permittee's watershed management plans to be completed during the term of the permit. Projects addressing stormwater quantity may be included if there is a water quality benefit to the project. At a minimum, the permittee shall address the following for each project in the summary: type of project or BMP, number of acres which the BMP treats, impervious and pervious acreage treated by the potential project, condition of the downstream channel, amount of total pollutant reduction, feasibility for implementation, and estimated cost of implementation. The summary shall include a prioritized list of the identified projects for consideration of implementation.	SWPD	The summary of potential stormwater management projects which may be selected from the permittee's watershed management plans to be completed during the term of the permit is provided in Appendix P2.	March 31, 2016 ★					Although not a specific reporting requirement in the permit, a summary of potential stormwater management projects was submitted to the Department no later than 12 months after the effective date of this state permit.		
B.1-2.	The permittee shall continue to seek public comment in development of the plans. A copy of the completed plans shall be placed on the permittee's website no later than 30 days after it is submitted to the Department.	SWPD	All of the watershed management plans have been completed and links to the completed plans are provided on the county's website: <a href="https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds">https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds</a>	March 31, 2016 ★	▶	▶	▶	▶	The permittee shall provide the Department a web link to the plans no later than 12 months after the effective date of this state permit and with each annual report.	The following web link to the county's watershed management plans was submitted to DEQ on March 30, 2016: <a href="https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds">https://www.fairfaxcounty.gov/publicworks/stormwater/watersheds</a>	
<b>B.2. MS4 Program Implementation</b>											
<b>B.2.a. Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands</b>											
B.2.a.1.	The permittee shall implement a local erosion and sediment control program consistent with the Virginia Erosion and Sediment Control Law § 62.1-44.15:51 of the Code of Virginia and Virginia Erosion and Sediment Control Regulations 9 VAC 25-840 et seq. and a stormwater management program consistent with the Virginia Stormwater Management Act § 62.1-44.15:24 of the Code of Virginia and Virginia Stormwater Management Program Regulations 9 VAC 25-870 et seq.	LDS	<ul style="list-style-type: none"> <li>The county continues to implement and enforce Fairfax County Code Chapter 104, Erosion and Sediment Control, and Chapter 124, Stormwater Management Ordinance. The county's erosion and sediment control program and stormwater management program have been approved by DEQ as consistent with the Virginia Erosion and Sediment Control Law, the Virginia Stormwater Management Act, and their attendant regulations.</li> <li>The county uses 2,500 square feet, which is the threshold for land disturbing activities to be regulated under the county's erosion and sediment control program, as the threshold for reporting the number of regulated land disturbing activities and the total number of acres disturbed.</li> </ul>		▶	▶	▶	▶	<ul style="list-style-type: none"> <li>Each annual report shall contain the number of regulated land disturbing activities approved and the total number of acres disturbed.</li> <li>Each annual report shall contain the number of land disturbing activity inspections conducted and the number and type of each enforcement action taken.</li> </ul>	Number of regulated land disturbing activities approved:	936
									Total number of acres disturbed:	827	
									Number of VESCP inspections conducted:	26,265	
									Number of VSMP inspections conducted:	414	
									Number of VESCP Notices of Violation Issued:	246	
									Number of VSMP Notices of Violation Issued:	18	
B.2.a.2.	The permittee shall identify in the MS4 Program Plan all legal authorities for erosion and sediment control and stormwater management that are more stringent than those required under 9 VAC 25-840 et seq. and/or 9 VAC 25-870 et seq. that have been adopted in accordance with § 62.1-44.15:65 and/or § 62.1-44.15:33 of the Code of Virginia.	LDS	The county has identified current county requirements that are more stringent than state law/regulations in an Erosion and Sediment Control Ordinance Stringency Table and a Stormwater Management Ordinance Stringency Table (see Appendix P3 and P4).		▶	▶	▶	▶	Each annual report shall include a summary of actions taken by the permittee to implement Part I.B.2.a)1) and 2) of this state permit.	Fairfax County has implemented a local Virginia E&S Control Program (VESCP) and a local Virginia Stormwater Management Program (VSMP) consistent with the applicable state regulations. The VESCP and VSMP programs are fully approved by DEQ and are implemented by the Department of Land Development Services (LDS).	

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
B.2.a-a.	See MS4 Action ID B.2.h.2.a.1.	MSMD	See MS4 Action ID B.2.h.2.a.1.	October 1, 2016 ★		The annual report due October 1, 2016 shall include the permittee's strategy to address maintenance of stormwater management controls that are designed to treat stormwater runoff solely from the individual residential lot on which they are located.				
B.2.a-b.	Part I.D.1)(i) of the permit requires inclusion in the Chesapeake Bay TMDL Action Plan of a list of future projects that qualify as grandfathered in accordance with 9 VAC 25-870-48.	LDS	The county's list of known land disturbing projects that qualify under the 'Grandfathering' provision of the VSMP regulations found at 9VAC25-870-48 were submitted with the 2016 Annual Report.	October 1, 2016 ★		The annual report due October 1, 2016 shall include a list of all known land disturbing projects that qualify under the 'Grandfathering' provision of the VSMP regulations found at 9 VAC 25-870-48.				
<b>B.2.b. Retrofitting on Prior Developed Lands</b>										
B.2.b.	From the list of stormwater management projects included in the analysis required in Part I.B.1, the permittee shall complete at least thirty (30) projects no later than the expiration date of this state permit. Projects implemented to meet the requirements of Part I.D of this state permit (TMDL Action Plan and Implementation for the Chesapeake Bay Special Condition or TMDL Action Plans other than the Chesapeake Bay TMDL) may be used to meet the requirements of this special condition. For retrofit projects that do not serve to meet the requirements of Part I.D, the permittee shall submit a summary of projects implemented during the reporting period with each annual report including type of land use being retrofitted, retrofit performed, completion date or anticipated completion date, total acreage retrofitted, total impervious and pervious acreage, and location by latitude and longitude (in decimal degrees).	SWPD	<ul style="list-style-type: none"> <li>The county will implement at least 30 projects from the list of projects required in Part I.B.1 no later than the expiration date of this permit.</li> <li>Stormwater retrofit projects are implemented to restore streams and provide stormwater management through the construction of a range of practices from onsite green infrastructure to regional detention ponds. Retrofits to existing stormwater management facilities are also implemented to improve water quality. These can include the use of shallow wetland marshes to enhance nutrient uptake and provide an increase in water absorption and transpiration. A secondary benefit of wetland marshes and naturally vegetated pond floors is the creation of habitat for wildlife.</li> </ul>	▶	▶	▶	▶	March 31, 2020 ★	Each annual report shall include a status update for those projects for which implementation began during the reporting period.	<ul style="list-style-type: none"> <li>Fairfax County reported completion of 30 projects from the list of projects submitted in compliance with Part I.B.1 of the permit during FY18.</li> <li>All projects implemented serve to meet the requirements of Part I.D. of the permit.</li> </ul>
<b>B.2.c. Roadways</b>										
B.2.c.	Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.	MSMD	The county meets this requirement through implementation of the actions described below.							

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline				Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.c.1.	No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets, and parking lots that includes the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs.	MSMD	<ul style="list-style-type: none"> <li>The majority of public roads in the county (interstate, primary, secondary, and residential) are maintained and operated by the Virginia Department of Transportation (VDOT), which is covered by a separate Phase II MS4 permit. Fairfax County is responsible for maintaining several miles of discontinuous road segments, many of which are unpaved. The county's street maintenance program is an interim program designed to provide essential maintenance, pending acceptance of the road segment into Virginia's Secondary Road System.</li> <li>The county currently operates and maintains parking lots associated with county facilities (such as government centers, libraries, fire stations, police stations, health centers, bus transit facilities, park and ride lots, commuter rail stations, public housing facilities, and staffed park locations).</li> <li>Fairfax County maintains a list of permittee maintained roads, streets and parking lots that complies with the permit requirements.</li> </ul>	March 31, 2016 ★	▶	▶	▶	▶		
B.2.c.2.	No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.	MSMD	The county will complete the development of appropriate SOPs by March 31, 2018.			March 31, 2018 ★	▶	▶	The permittee shall include a copy of the written protocols identified in Part I.B.2.c)(2) with the annual report due October 1, 2018.	During FY18, the County developed Outdoor Material Storage; Parking Lot and Street Sweeping; Roadway and Parking Lot Construction and Maintenance; and Vehicle and Equipment Repair and Maintenance Procedures as required by the permit. The procedures can be found in Appendices P5-P8.
B.2.c.3.	Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.	MSMD	Deicing materials are stored in bulk in large, covered bins at all facilities operated by MSMD, the FCPA mobile crew storage facility, FCPS central bulk storage facility and the I-95 landfill. For all county storage sites, sand and deicing materials remain covered unless being loaded. After loading, any excess material is swept or shoveled back into the storage pile or container and covered.	▶	▶	▶	▶	▶		
B.2.c.4.	The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.	MSMD	<ul style="list-style-type: none"> <li>Fairfax County currently uses sand as an abrasive and calcium chloride or rock salt for deicing roadways. The county has changed from calcium chloride to magnesium chloride for deicing walkways; however, this change is not feasible for roadways where public safety is the first priority.</li> <li>Fairfax County does not apply deicing agents containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks or other paved surfaces.</li> </ul>	▶	▶	▶	▶	▶		
<b>B.2.d. Pesticide, Herbicide, and Fertilizer Application</b>										
B.2.d.	The permittee shall continue to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied to permittee rights of way, parks, and other permittee property, as follows:	SWPD	The county meets this requirement through implementation of the actions described below.							



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.d.1.	The permittee shall develop and implement turf and landscape nutrient management plans that have been developed by a certified nutrient management planner in accordance with § 10.1-104.2 of the Code of Virginia on all lands owned or operated by the permittee where nutrients are applied to a contiguous area greater than one acre in accordance with the following schedule:						
B.2.d.1.a.	No later than 12-months after the effective date of this state permit the permittee shall identify all permittee lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude shall be provided for each such piece of permittee land.	SWPD	County staff has identified all county lands where nutrients are applied to a contiguous area of more than one acre. A latitude and longitude have been provided for each area.	March 31, 2016 ★	▶	The report due October 1, 2016 shall contain a list of all permittee lands and applicable acreage on which nutrients are applied to more than one contiguous acre.	
B.2.d.1.b.	The permittee shall develop and implement turf and landscape nutrient management plans on all permittee lands where nutrients are applied to a contiguous area of more than one acre. The following measurable goals are established for the development and implementation of turf and landscape nutrient management plans.	SWPD	<ul style="list-style-type: none"> <li>County staff has started the development and implementation of turf and landscape nutrient management plans for county lands where nutrients are applied to a contiguous area of more than one acre – see MS4 Action ID B.2.d.1.a.</li> <li>The plans will be developed to meet the schedule outlined in MS4 Action IDs B.2.d.1.b.1-3.</li> </ul>	▶	▶	Each annual report submitted after October 1, 2016 shall report on compliance with the turf and landscape nutrient management plan implementation schedule and include a list of the permittee's properties for which turf and landscape nutrient management plans have been implemented during the reporting year and the cumulative total of acreage under turf and landscape nutrient management plans.	<ul style="list-style-type: none"> <li>Fairfax County has developed nutrient management plans for 100% of the lands where nutrients are applied to a contiguous area of more than one acre.</li> <li>See Appendix R2 for the full list of county land requiring nutrient management plans and the status of nutrient management plan implementation.</li> </ul>
B.2.d.1.b.1.	No later than 24-months after the effective date of this state permit, not less than 15% of all identified acres will be covered by turf and landscape nutrient management plans.	SWPD	See MS4 Action ID B.2.d.1.b.	▶	March 31, 2017 ★	See MS4 Action ID B.2.d.1.b.	
B.2.d.1.b.2.	No later than 36-months after the effective date of this state permit, not less than 40% of all identified acres will be covered by turf and landscape nutrient management plans.	SWPD	See MS4 Action ID B.2.d.1.b.	▶	▶	See MS4 Action ID B.2.d.1.b.	
B.2.d.1.b.3.	No later than 48-months after the effective date of this state permit, not less than 75% of all identified acres will be covered by turf and landscape nutrient management plans.	SWPD	See MS4 Action ID B.2.d.1.b.	▶	▶	See MS4 Action ID B.2.d.1.b.	
					March 31, 2018 ★		
					▶		
					▶		
					March 31, 2019 ★		



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.d.1.c.	The permittee shall annually track the following:	SWPD	<ul style="list-style-type: none"> <li>The county will track the information described in MS4 Action IDs B.2.d.1.c.1-3.</li> <li>This information will be used for Specific Reporting Requirements for MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.</li> </ul>	▶	▶	▶	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.
B.2.d.1.c.1.	The total acreage of permittee lands upon which nutrients are applied and controlled using general county guidelines or standard operating procedures;	SWPD	County staff will track the total acreage where nutrients are applied on identified county lands with a contiguous area greater than one acre.	▶	▶	▶	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.
B.2.d.1.c.2.	The acreage of permittee lands where turf and landscape nutrient management plans are required; and	SWPD	County staff will track the acreage where turf and landscape nutrient management plans are required.	▶	▶	▶	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.
B.2.d.1.c.3.	The acreage of permittee lands covered by turf and landscape nutrient management plans that have been implemented.	SWPD	County staff will track the acreage of county lands covered by turf and landscape nutrient management plans.	▶	▶	▶	See MS4 Action IDs B.2.d.1.a. and B.2.d.1.b.
B.2.d.2.	The permittee shall continue to employ good housekeeping/pollution prevention measures in the application, storage, transport and disposal of pesticides, herbicides and fertilizers.	SWPD	<ul style="list-style-type: none"> <li>All pesticide and herbicide applications are performed by certified technicians.</li> <li>The county maintains general guidelines and procedures to be followed in the application, storage, transport and disposal of pesticides, herbicides and fertilizers.</li> <li>County personnel and private contractors follow the Virginia Department of Conservation and Recreation's nutrient management training and certification and the Virginia Department of Agriculture's guidelines for certification and training of pesticide applicators.</li> </ul>	▶	▶	▶	
B.2.d.3.	The permittee may regulate the use, application, or storage of fertilizers pursuant to §3.2-3602 of the Code of Virginia.	SWPD	No additional local fertilizer requirements are in place at this time beyond state requirements.	▶	▶	▶	
B.2.d.4.	The permittee shall track the acreage of permittee lands managed under Integrated Pest Management Plans.	SWPD	Fairfax County tracks the acreage of county lands managed under Integrated Pest Management Plans.	▶	▶	▶	Each annual report shall include the number of acres managed under Integrated Pest Management Plans. Fairfax County has 312.9 acres managed under Integrated Pest Management Plans. - Green Springs Garden manages 31 acres of IPMs - Laurel Hill manages 281.9 acres of IPMs
<b>B.2.e. Illicit Discharges and Improper Disposal</b>							
B.2.e.	Discharges to the MS4 not authorized by this state permit shall be effectively prohibited.	FRD; DPWES; HD	The county will continue to implement and enforce Fairfax County Fire Prevention Ordinance (Chapter 62), Stormwater Management Ordinance (Chapter 124), Food and Food-Service Establishments Ordinance (Chapter 43.1), Individual Sewage Disposal Facilities Ordinance (Chapter 68.1), Water Recreation Facilities Ordinance (Chapter 69.1), Sanitary Sewers and Sewage Disposal Ordinance (Chapter 67.1), and Solid Waste Management Ordinance (Chapter 109). The county will update these authorities as needed and to the extent allowed by state enabling authority.	▶	▶	▶	

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
B.2.e.1.	In accordance with Part I.A.1.b), certain non-stormwater discharges to the MS4 need not be addressed as illicit discharges or improper disposal. The MS4 Program Plan shall identify any non-stormwater discharges listed under Part I.A.1.b), where the permittee has imposed any conditions on the discharges to the MS4. The permittee shall prohibit, on a case-by-case basis, any individual non-stormwater discharge (or class of non-stormwater discharges) otherwise allowed under this paragraph that is determined to be contributing significant amounts of pollutants to the MS4.	SWPD	<ul style="list-style-type: none"> <li>The county has not imposed any conditions on non-stormwater discharges to the MS4 that are authorized under Part I.A.1.b) of the permit.</li> <li>The county will prohibit on a case-by-case basis or by class any non-stormwater discharge otherwise allowed under the permit that the county determines to be contributing significant amounts of pollutants to the MS4 based on factual findings from an analysis of relevant data and that the county determines are necessary to protect water quality.</li> </ul>	▶	▶	▶	▶	▶		
B.2.e.2.	The permittee shall continue implementing a sanitary sewer inspection program to minimize the exfiltration from the sanitary system to the MS4. The permittee shall inspect a minimum of 750,000 linear feet of sanitary sewer during this permit cycle.	WCD	<ul style="list-style-type: none"> <li>The county will continue to implement the Sanitary Sewer Infiltration Abatement Program.</li> <li>A minimum of 750,000 linear feet of sanitary sewer will be inspected during this permit cycle.</li> </ul>	▶	▶	▶	▶	▶	Each annual report shall include the amount of linear feet of sanitary sewer inspected during the reporting year.	Fairfax County inspected 1,275,946 linear feet of existing sanitary sewers during the reporting year.
B.2.e.3.	The permittee shall continue to implement a program to reduce the discharge of floatables (e.g. litter and other human-generated solid refuse) in accordance with Part I.C.3.	SWPD; MSMD	<p>The county will continue to implement a program to reduce the discharge of floatables consisting of the following two elements:</p> <ul style="list-style-type: none"> <li>The county removes floatables and other litter from county-operated stormwater management facilities.</li> <li>The county has a memorandum of understanding with the Clean Fairfax Council to implement a litter control and recycling education program (see MS4 Action ID B.2.j.1.f.) and to monitor the discharge of floatables from the MS4 (see MS4 Action ID C.3.a.)</li> </ul>	▶	▶	▶	▶	▶		
B.2.e.4.	The permittee shall prohibit the dumping or disposal of used motor vehicle fluids, household hazardous wastes, sanitary sewage, grass clippings, leaf litter, and animal wastes into the MS4. The permittee shall ensure the implementation of programs to collect used motor vehicle fluids (such as oil and antifreeze) for recycling, reuse, or proper disposal and to collect household hazardous waste materials (including paint, solvents, pesticides, herbicides, and other hazardous materials) for recycling, reuse, or proper disposal. Such programs shall be readily available to all private residents and shall be publicized and promoted on a regular basis not less than twice per year.	DSWCR	<ul style="list-style-type: none"> <li>The county will continue to implement and enforce the county Fire Prevention Ordinance (Chapter 62), Stormwater Management Ordinance (Chapter 124), Sanitary Sewers and Sewage Disposal Ordinance (Chapter 67.1), and Solid Waste Management Ordinance (Chapter 109). The county will review these authorities and update as needed and to the extent allowed by state enabling authority.</li> <li>The county will continue to implement a program that collects used motor vehicle fluids and household hazardous waste (HHW) materials from private residents for recycling, reuse, or proper disposal. The program will be publicized and promoted on the county's website and through other means (press releases, newspaper advertising, etc.) at least twice per year.</li> <li>See MS4 Action ID B.2.j.a.d for information on promotion of the county's Household Hazardous Waste Program.</li> </ul>	▶	▶	▶	▶	▶		

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)		
B.2.e.5.	The permittee shall continue to implement a program to locate and eliminate illicit discharges and improper disposal into the MS4. This program shall include dry weather screening activities to locate portions of the MS4 with suspected illicit discharges and improper disposal, as described in Part I.B.2.l)(1) of this state permit.	SWPD	<ul style="list-style-type: none"> <li>The county will continue to implement its dry weather screening program as described in MS4 Action ID B.2.1.1.a.</li> <li>The county will continue to respond to reports of suspected illicit discharges and improper disposal (IDID). Initial IDID reports document what is known about the suspected IDID and help identify the party responsible for addressing the discharge. If a significant pollutant load (including but not limited to a discharge of sewage, industrial waste, other wastes or any noxious or deleterious substance or a hazardous substance) from a property enters state waters, DEQ shall be notified immediately upon discovery of the discharge (or no later than 24 hours), and follow up in writing (sent by mail or email).</li> <li>Investigations of suspected IDIDs begin with a visual inspection of the selected point of connection to the MS4 for evidence of an illicit discharge and recording of observations. If flow is present, water chemistry tests can be performed in the field or samples may be collected and preserved on ice while the source is tracked down based on visual or olfactory cues. The source of the discharge is tracked down by testing farther up the storm drain network. Discharges are sampled from upstream manholes in the storm drain network to narrow down the source of the discharge to a specific pipe segment between two manholes or the input source. After the source of an illicit discharge has been identified, the appropriate agency is contacted to address the discharge.</li> </ul>	▶	▶	▶	▶	▶	
B.2.e.6.	The permittee shall require the elimination of illicit discharges and improper disposal practices within 30-days of discovery. Where elimination of an illicit discharge within 30-days is not possible, the permittee shall require an expeditious schedule for removal of the discharge. In the interim, the permittee shall require the operator of the illicit discharge to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.	SWPD	Once the source of the IDID has been located and the responsible party identified, the county works with the responsible party to ensure that the discharge is eliminated within 30 days. Where elimination is not possible within 30 days, the party responsible for the illicit discharge shall be required to generate an expeditious schedule and to take all reasonable and prudent measures to minimize the discharge of pollutants to the MS4.	▶	▶	▶	▶	▶	<p><i>Each annual report shall include a list of illicit discharges identified, the source, a description of follow-up activities and whether the illicit discharge has been eliminated.</i></p> <ul style="list-style-type: none"> <li>Fairfax County investigated and closed 82 reports of illicit discharge or improper disposal during the reporting period. Two investigations that were ongoing when the previous reporting year ended have been closed.</li> <li>See Appendix R3 for the list of confirmed illicit discharges and improper disposals during the reporting year including the source, follow-up activities, and status.</li> </ul>

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
<b>B.2.f. Spill Prevention and Response</b>							
B.2.f.	<i>The permittee shall continue to implement a program that coordinates with the Fire Department and other permittee operated departments to prevent, contain, and respond to spills that may discharge into the MS4. The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's jurisdiction.</i>	FRD	<ul style="list-style-type: none"> <li>The county meets this requirement through implementation of applicable Fairfax County Fire Prevention Division Policies, Operations, and Procedures and the Fire Investigations Section (FIS) Operation &amp; Procedure Manual, Section 11 – Environmental Crimes. In that section it discusses who to contact, documentation, Illicit discharge, the VA fire prevention code on responsibility for cleanup, and VDOT. In Appendix D is the Hazmat Notification Matrix., MS4 Permit Requirements). These materials document how spill prevention and response is coordinated among county agencies.</li> <li>The county's overall spill prevention and response program is described in two sections of the Fairfax County Fire Prevention Division Policies, Operations, and Procedures. These include: (1) Hazardous Materials Investigation Program Description; and, (2) Hazardous Materials Services Section Hazardous Materials Release, Oversight, and Monitoring Program Description. The FIS Training Manual addresses specific MS4 permit requirements, including coordination of spill prevention, containment, and response as well as training and reporting requirements.</li> <li>The FRD Hazardous Materials Response Team (HMRT) responds to reported incidents of hazardous material releases, spills, and discharges.</li> <li>Spill prevention at county facilities is addressed in MS4 Action ID B.2.i.2.c.</li> </ul>	October 1, 2016 ★	▶▶▶▶	Beginning with the annual report due October 1, 2016, each annual report shall include a list of spills, the source (identified to the best of the permittee's ability), and a description of follow-up activities taken.	<ul style="list-style-type: none"> <li>The Fairfax County Fire and Rescue Department responded to 9 spills to the county's MS4 during the reporting period.</li> <li>See Appendix R4 for the list of spill responses during the reporting year including the source and follow-up activities.</li> </ul>
<b>B.2.g. Industrial &amp; High Risk Runoff</b>							
B.2.g.	<i>The permittee shall implement a program to identify and control pollutants in stormwater discharges to the MS4 from industrial and high risk runoff facilities (e.g., municipal landfills; other treatment, storage, or disposal facilities for municipal waste; hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313) and any other industrial or commercial discharges the permittee determines are contributing a significant pollutant loading to the MS4.</i>	SWPD	The county meets this requirement through implementation of the actions described below.				



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.g.1.	The permittee shall maintain, and update as necessary, a list of all known industrial and high-risk dischargers to the MS4. This list shall include VPDES industrial stormwater permits.	SWPD	The county maintains a list of known industrial and high risk dischargers to the county MS4 and updates the list as needed. The list encompasses any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that the county determines may be contributing a significant pollutant loading to the county MS4, including major automotive facilities. Major updates of the list will be performed at least once per five-year permit cycle. The county obtains information about potential industrial and high risk dischargers from private commercial sources; state VPDES permit lists; lists maintained by EPA of EPCRA Title III, Section 313 facilities; and referrals from other county programs such as Illicit Discharge and Improper Disposal (IDID).				The annual report due October 1, 2016 shall include a list of all known industrial and high risk dischargers including any non-VPDES regulated industrial and commercial stormwater dischargers determined by the permittee as contributing a significant pollutant load and that discharge to the MS4 system, a schedule of inspections and procedures for inspecting outfalls.
B.2.g.2.	No later than 12-months after the effective date of this state permit, the permittee shall develop and implement a prioritized schedule and procedure to inspect outfalls of facilities with VPDES industrial stormwater permits at the point of connection to the MS4. Prioritization may be based on historical discharges, local water quality impairments, industrial category or other methods selected by the permittee. The permittee shall inspect all VPDES industrial stormwater permitted outfalls connected to its MS4 a minimum of once every five years.	SWPD	<ul style="list-style-type: none"> <li>The county meets this requirement through implementation of "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (see Appendix P9).</li> <li>The document in Appendix P9 establishes the procedures by which county staff establish priorities for IHRR inspections.</li> </ul>	March 31, 2016 ★			<p>Beginning with the annual report due October 1, 2016, each annual report shall include a report on implementation of the inspection schedule and include a list of the facilities and/or facility outfalls inspected during the reporting period.</p> <ul style="list-style-type: none"> <li>Fairfax County inspected the points of connection to the MS4 from 53 facilities on the IHRR list during the reporting period.</li> <li>See Appendix R5 for the list of IHRR facilities inspected during the reporting period.</li> </ul>
B.2.g.3.	The permittee shall review copies of discharge monitoring reports (DMRs) submitted to the permittee by VPDES industrial stormwater permitted facilities as part of the permittee's investigations of significant pollutant loadings. The permittee may conduct additional monitoring, or may require the facility to conduct additional monitoring, of any stormwater discharges it believes may be a source of significant pollutant loadings.	SWPD	The county meets this requirement through implementation of guidelines by which county staff request, review and track DMRs and notify DEQ of DMRs that were not submitted.				
B.2.g.4.	The permittee shall coordinate with the Department to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the MS4 system. Inspections of facilities for which the permittee has evidence of significant pollutant loading may be carried out in conjunction with other permittee programs.	SWPD	<ul style="list-style-type: none"> <li>The county meets this requirement through implementation of "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (see Appendix P9).</li> <li>The document in Appendix P9 establishes the procedures by which county staff identify non-VPDES permitted industrial facilities with evidence that a significant pollutant load is entering the MS4 system and procedures to refer these facilities to DEQ.</li> </ul>				

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
B.2.g.5.	<p>The permittee shall refer the following facilities to the Department of Environmental Quality, Northern Regional Office, for Department compliance review under the Virginia State Water Control Law:</p> <p>(a) Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.</p> <p>(b) Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.</p> <p>(c) Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.</p> <p>(d) Facilities that do not submit signed copies of DMRs to the permittee as required under a VPDES industrial stormwater permit.</p>	SWPD	<ul style="list-style-type: none"> <li>The county meets this requirement through implementation of "Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections" (see Appendix P9).</li> <li>The document in Appendix P9 establishes the procedures by which county staff identify facilities meeting the requirements for referral to DEQ under Part I.B.2.g)5) of the MS4 permit and procedures to refer these facilities to DEQ.</li> </ul>	▶	▶	▶	▶	▶	Each annual report shall include a list of referrals to the Department.	Fairfax County referred zero (0) facilities to DEQ during the reporting period.
B.2.g.6.	<p>The permittee shall maintain a list of any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the MS4. This list may be individual discharges or categories of discharges.</p> <p>(a) Outfalls from these facilities shall be included in the prioritized inspection schedule.</p> <p>(b) The list shall include, but shall not be limited to, major automotive facilities such as repair shops, body shops, auto detailers, tire repair shops and service stations.</p> <p>(c) The permittee shall require control measures as necessary and/or appropriate for stormwater discharges from these dischargers.</p>	SWPD	<ul style="list-style-type: none"> <li>The county will include industrial and commercial stormwater dischargers that the county determines are contributing a significant pollutant loading to the MS4 with the list described in MS4 Action ID B.2.g.1.</li> <li>These outfalls will be included in the prioritized inspection schedule in MS4 Action ID B.2.g.2.</li> <li>Control measures shall be required as necessary and/or appropriate for stormwater discharges from these dischargers in accordance with the enforcement authority identified in MS4 Action ID B.2.e.</li> </ul>	▶	▶	▶	▶	▶		
<b>B.2.h. Stormwater Infrastructure Management</b>										
B.2.h.	The permittee shall continue to maintain and implement programs to maintain the permittee's stormwater infrastructure and to update the accuracy and inventory of the storm sewer system.									
B.2.h.1.	For stormwater management (SWM) facilities and infrastructure maintained by the permittee including residential properties where SWM facilities, BMP and Storm Drainage Systems qualify for permittee maintenance (excluding apartments and mobile home parks), the following conditions apply:	MSMD	The county meets this requirement through implementation of the actions described below.							



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)																																																																																																																					
B.2.h.1.a.	The permittee shall provide for adequate long-term operation and maintenance of SWM facilities owned or operated by the permittee in accordance with written inspection and maintenance procedures included in the MS4 Program Plan.	MSMD	<ul style="list-style-type: none"> <li>The county provides long-term operation and maintenance of county facilities in accordance with the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10).</li> <li>MSMD inspects and maintains SWM facilities on county property or within county easements.</li> <li>The procedures are updated as needed.</li> </ul>	March 31, 2016 ★	▶▶▶▶	The annual report due October 1, 2016 shall include the written inspection and maintenance procedures.																																																																																																																						
B.2.h.1.b.	The permittee shall, at a minimum, inspect annually all SWM facilities owned or operated by the permittee. The permittee may choose to implement an alternative schedule to inspect these SWM facilities based on a risk assessment that includes facility type and expected maintenance needs provided that the alternative schedule is included in the MS4 Program Plan in accordance with plan modifications as listed in Part I.A.7.a) of this state permit.	MSMD	<ul style="list-style-type: none"> <li>The inspection frequency of county-maintained SWM facilities within the inventory is dependent on the type of facility.</li> <li>The county inspects county facilities that have routine maintenance programs every other year. Regional ponds and facilities that do not have routine maintenance programs are inspected annually. The alternative inspection schedule and the risk assessment upon which it is based are included in the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10).</li> <li>During inspections, MSMD and their contractors identify and document any necessary non-routine maintenance work. Each inspection form is tailored to the type of facility being inspected and has a standardized prioritization process.</li> </ul>		▶▶▶▶	Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.h)1), including the type and number of stormwater structures inspected and maintained; the total number of stormwater structures owned or operated by the permittee.	<table border="1"> <thead> <tr> <th>Type of stormwater structure (defined for the purposes of this report as the type of stormwater management facility)</th> <th>Number Inspected</th> <th>Number Maintained</th> <th>Number Repaired</th> <th>Total Number Owned or Operated by County</th> </tr> </thead> <tbody> <tr><td>AS (Soil Compost Amendment)</td><td>17</td><td>-</td><td>-</td><td>17</td></tr> <tr><td>BR (Bioretention)</td><td>-</td><td>143</td><td>14</td><td>143</td></tr> <tr><td>CS (Cistern System)</td><td>2</td><td>-</td><td>1</td><td>4</td></tr> <tr><td>DP (Dry Pond - peak shaver/extended detention/enhanced extended detention)</td><td>781</td><td>1,419</td><td>398</td><td>1,433</td></tr> <tr><td>FC-PL566 (PL566 Dams)</td><td>6</td><td>6</td><td>6</td><td>6</td></tr> <tr><td>FTW (Floating Treatment Wetland)</td><td>4</td><td>4</td><td>-</td><td>4</td></tr> <tr><td>GR (Vegetated Roof)</td><td>-</td><td>15</td><td>6</td><td>16</td></tr> <tr><td>MB (Manufactured BMP)</td><td>33</td><td>-</td><td>7</td><td>36</td></tr> <tr><td>OS (Open Space/Meadow)</td><td>6</td><td>-</td><td>1</td><td>6</td></tr> <tr><td>PP (Permeable Pavement)</td><td></td><td>93</td><td>1</td><td>118</td></tr> <tr><td>RF (Reforestation)</td><td>58</td><td>-</td><td>-</td><td>58</td></tr> <tr><td>RT (Rooftop Detention)</td><td>1</td><td>-</td><td>-</td><td>1</td></tr> <tr><td>SF (Sand Filter)</td><td>9</td><td>1</td><td>2</td><td>10</td></tr> <tr><td>ST (Synthetic Turf)</td><td>1</td><td>-</td><td>-</td><td>1</td></tr> <tr><td>TF (Tree Box Filter/Filtrerra)</td><td>-</td><td>237</td><td>19</td><td>240</td></tr> <tr><td>TR (Infiltration Practice/Trench)</td><td>100</td><td>3</td><td>11</td><td>100</td></tr> <tr><td>UG (Underground Detention)</td><td>112</td><td>-</td><td>11</td><td>115</td></tr> <tr><td>VS (Vegetated Swale)</td><td>-</td><td>73</td><td>9</td><td>73</td></tr> <tr><td>WL (Constructed Wetland)</td><td>2</td><td>2</td><td>-</td><td>2</td></tr> <tr><td>WP (Wet Pond)</td><td>19</td><td>22</td><td>10</td><td>30</td></tr> <tr><td>WS (Wet Swale)</td><td>7</td><td>-</td><td>-</td><td>7</td></tr> <tr><td><b>TOTAL</b></td><td><b>1,158</b></td><td><b>2,018</b></td><td><b>165</b></td><td><b>2,421</b></td></tr> </tbody> </table>	Type of stormwater structure (defined for the purposes of this report as the type of stormwater management facility)	Number Inspected	Number Maintained	Number Repaired	Total Number Owned or Operated by County	AS (Soil Compost Amendment)	17	-	-	17	BR (Bioretention)	-	143	14	143	CS (Cistern System)	2	-	1	4	DP (Dry Pond - peak shaver/extended detention/enhanced extended detention)	781	1,419	398	1,433	FC-PL566 (PL566 Dams)	6	6	6	6	FTW (Floating Treatment Wetland)	4	4	-	4	GR (Vegetated Roof)	-	15	6	16	MB (Manufactured BMP)	33	-	7	36	OS (Open Space/Meadow)	6	-	1	6	PP (Permeable Pavement)		93	1	118	RF (Reforestation)	58	-	-	58	RT (Rooftop Detention)	1	-	-	1	SF (Sand Filter)	9	1	2	10	ST (Synthetic Turf)	1	-	-	1	TF (Tree Box Filter/Filtrerra)	-	237	19	240	TR (Infiltration Practice/Trench)	100	3	11	100	UG (Underground Detention)	112	-	11	115	VS (Vegetated Swale)	-	73	9	73	WL (Constructed Wetland)	2	2	-	2	WP (Wet Pond)	19	22	10	30	WS (Wet Swale)	7	-	-	7	<b>TOTAL</b>	<b>1,158</b>	<b>2,018</b>	<b>165</b>	<b>2,421</b>		
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B.2.h.1.c.	The permittee shall conduct maintenance on SWM facilities owned or operated by the permittee as necessary.	MSMD	<ul style="list-style-type: none"> <li>MSMD performs routine maintenance on ponds, tree box filters, bioretention facilities, vegetated swales, green roofs and permeable pavement within the public inventory. Depending on the type and age of the facility, maintenance is performed from once up to five times per year.</li> <li>County SWM facilities are maintained in accordance with the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10).</li> </ul>		▶▶▶▶	See MS4 Action ID B.2.h.1.b.	See MS4 Action ID B.2.h.1.b.																																																																																																																					

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							Activity	Linear Feet	Percent			
B.2.h.1.d.	The permittee shall continue its stormwater system inspection program and shall inspect no less than 15% of the MS4 annually and 100% of the system during the term of the permit.	MSMD	<ul style="list-style-type: none"> <li>The county has an ongoing program to digitally video and physically inspect the storm sewer system. As part of this process, MSMD is using GIS to develop a Physical Condition Assessment (PCA) layer for segments of each pipe, storm sewer structure and channel for use in prioritizing assets most in need of repair or rehabilitation.</li> <li>MSMD maintains mapping of the county stormwater infrastructure. This infrastructure inventory is continuously updated based on recorded easements, new as-built plans and condition assessments performed through internal closed-circuit television surveillance and walking/field verification.</li> <li>When defining the condition of the system and determining corrective actions, MSMD staff distinguishes between deficiencies that are structural in nature and those that can be addressed through operations and maintenance activities.</li> </ul>	▶	▶	▶	▶	▶	Each annual report shall include a list of activities including inspections, maintenance, and repair of stormwater infrastructure operated by the permittee as required in Part I.B.2.h)1), including the total linear feet of storm sewer system owned and/or operated by the permittee; and the linear feet of storm sewer system inspected.	Total storm sewer system owned and/or operated by county:	8,106,158	100.0
										Total storm sewer system inspected:	1,699,938	20.9
										Cumulative storm sewer system inspected since 4/1/2015.	12,707,990	156.8
										Total storm sewer system maintained:	65,472	0.81
										Total storm sewer system repaired:	12,572	0.16
B.2.h.1.e.	The permittee shall dispose of all wastes and wastewaters collected during stormwater system cleaning in accordance with local, state, and federal laws and regulations.	MSMD	County staff and contractors dispose of wastes and wastewaters collected from stormwater system cleaning in accordance with local, state and federal laws and regulations.	▶	▶	▶	▶	▶				
B.2.h.1.f.	The permittee shall obtain any required state or federal permit(s) necessary to complete maintenance activities.	MSMD	The county obtains all permits necessary to complete maintenance activities.	▶	▶	▶	▶	▶				
B.2.h.2.	For SWM facilities not maintained by the permittee and that discharge into the MS4, the following conditions apply:	MSMD	The county meets this requirement through implementation of the actions described below.									
B.2.h.2.a.	The permittee shall continue to implement a program to ensure proper maintenance of each privately maintained SWM facility that discharges into the MS4 system as documented in the MS4 Program Plan.	MSMD	<ul style="list-style-type: none"> <li>The county's program to ensure proper maintenance of privately maintained SWM facilities is provided in the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (see Appendix P10).</li> <li>Before a privately-maintained facility can be constructed in the county, a private maintenance agreement (PMA) is required to be executed and recorded in the land records of the county. Not all privately-owned and maintained facilities in the county have PMAs, due to changing requirements occurring in the 1980s. The PMA gives the county the legal authority to inspect, and if necessary, maintain the facility and requires that the facility be maintained in good working condition.</li> </ul>	▶	▶	▶	▶	▶				

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)	
B.2.h.2.a.1.	Beginning with the effective date of this state permit and in accordance with 9 VAC 25-870-112 B, maintenance agreements may be used but are not required for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located provided that the permittee has developed and implemented a strategy to address maintenance of such stormwater management controls. Should the permittee choose a strategy other than a maintenance agreement, such a strategy shall be provided in writing no later than 12 months after the effective date of this state permit and shall include periodic inspections, homeowner outreach and education, or other methods targeted at promoting the long term maintenance of such facilities.	MSMD	<ul style="list-style-type: none"> <li>The county currently requires maintenance agreements for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located. Inspection and follow-up procedures are provided in the "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (Appendix P10).</li> <li>In accordance with 9VAC25-870-112 B, the county has the discretion to adopt an alternative strategy for stormwater control measures that are designed to treat stormwater runoff solely from the individual residential lot on which they are located. The county has chosen to continue to require PMAs for these facilities at this time and any changes to the county's strategy will be reported to DEQ and reflected in updates to this Program Plan.</li> </ul>	October 1, 2016 ★	▶▶▶▶	The annual report due October 1, 2016 shall include the permittee's strategy to address maintenance of stormwater management controls that are designed to treat stormwater runoff solely from the individual residential lot on which they are located.		
B.2.h.2.a.2.	For SWM facilities that are privately maintained and for which maintenance agreements have been established between the permittee and the owner, the permittee shall inspect all privately maintained facilities no less than once per 5 years and conduct follow-up activities to ensure the required maintenance has been completed. Inspections may be conducted by the permittee or their designee as defined in 9 VAC 25-870-114.	MSMD	<ul style="list-style-type: none"> <li>The county's inspection and follow-up procedures are provided in "Post-Construction Stormwater Inspection and Maintenance Policies and Procedures" (Appendix P10).</li> <li>Private facilities are routinely scheduled for inspection by a contractor or by in-house staff, with the goal of inspecting each privately-maintained facility at least once every five years. A detailed inspection report, including photographs, plans and a geographic information system (GIS) map is provided to the owner(s) upon completion of each inspection. The report informs the owner(s) of any maintenance deficiencies observed during the inspection and provides a timeline for addressing deficiencies.</li> <li>The county has an enforcement program in place if owners fail to voluntarily comply with our requests to complete noted deficiencies. The enforcement program is based on whether the facility is functioning as designed or not.</li> </ul>	▶▶▶▶	▶▶▶▶	<ul style="list-style-type: none"> <li>Each annual report shall include a list of activities including inspections performed and notifications of needed maintenance and repair of stormwater facilities not operated by the permittee as required by Part 1.B.2.h)2).</li> <li>Each annual report shall provide a summary of actions taken by the permittee to address failure of privately maintained SWM facilities owners to abide by maintenance agreements.</li> </ul>	Number of privately maintained stormwater management facilities inspected:	1,191
							Notifications of needed maintenance and repair of privately maintained SWM facilities:	429
							Actions taken by the county to address failure of privately maintained SWM facilities owners to abide by maintenance agreements:	0
B.2.h.2.a.3.	For SWM facilities that are privately maintained and for which maintenance agreements have not been established between the permittee and the owner, the permittee shall implement a pilot program consisting of the following:	MSMD	The county meets this requirement through implementation of the actions described below.					

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.h.2.a.3.i.	No later than 12-months after the effective date of the permit, the permittee shall develop draft procedures and policies that are designed to ensure that inspection and maintenance of privately maintained SWM facilities without maintenance agreements are being conducted. The draft procedures and policies should identify any expected limitations to the permittee's ability to implement these procedures and policies and should propose options to overcome these limitations;	MSMD	<ul style="list-style-type: none"> <li>Fairfax County maintains and implements procedures and policies to ensure the inspection and maintenance of privately maintained SWM facilities without maintenance agreements are being conducted.</li> <li>If owners are not maintaining facilities as needed and PMAs are not recorded, the county can pursue compliance with stormwater management requirements that are specified on approved plans through the enforcement of Zoning Ordinance §17-108(6) and §18-901(3). The enforcement policy outlined in the procedures describes Notices of Inspection, Notices of Maintenance Verification, Notices of Violation, an appeals process, penalties and potential program limitations.</li> </ul>	March 31, 2016 ★			
B.2.h.2.a.3.ii.	No later than 15-months after the effective date of the permit, the permittee shall implement these draft procedures and policies including the proposed options identified in subsection Part I.B.2.h)2)a)(3)(i) above; and	MSMD	Fairfax County maintains and implements procedures and policies developed in MS4 Action ID B.2.h.2.a.3.i.	June 30, 2016 ★	▶		
B.2.h.2.a.3.iii.	No later than 36-months after the effective date of the permit, the permittee shall modify the draft policy and procedures required by Part I.B.2.h)2)a)(3)(i) for the inspection of privately maintained SWM facilities based on the findings of Part I.B.2.h)2)a)(3)(ii) and finalize the inspection procedures.	MSMD	Fairfax County maintains and implements procedures and policies developed in MS4 Action ID B.2.h.2.a.3.i.		March 31, 2018 ★	▶ ▶	
B.2.h.3.	No later than 18 months after the effective date of this permit, the permittee shall map the MS4 service area and each MS4 outfall. The following information shall be tracked for each MS4 outfall: (a) An individual identification number, local watershed, HUC and receiving water; (b) The latitude and longitude in decimal degrees; and (c) New outfalls shall be tracked upon their inclusion into the MS4.	MSMD	<ul style="list-style-type: none"> <li>Fairfax County has identified all outfalls owned or operated by Fairfax County that discharge to surface waters (i.e. MS4 outfalls).</li> <li>Each MS4 outfall has an individual identification number, the local watershed, HUC and receiving water in which it is located are identified, and its latitude and longitude are provided in in decimal degrees.</li> <li>The county has delineated the drainage area to each of its MS4 outfalls (i.e. the MS4 service area).</li> <li>The county updates the mapping layers to incorporate new outfalls once as-built plans are provided by the party responsible for constructing the new outfall.</li> </ul>	September 30, 2016 ★	▶ ▶ ▶	The MS4 service area map including outfalls and information included in Part I.B.2.h)3) shall be submitted no later than 18 months after the effective date of this state permit. The information shall be submitted as an electronic file in one of the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.	



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.h.4.	No later than 24 months after the effective date of this state permit, the permittee shall identify the following for each local watershed, sixth order HUC and Chesapeake Bay Segment: (a) The number of impervious, pervious and total acres served by the MS4 as of June 30, 2009. (b) The number of impervious, pervious and total acres treated by stormwater controls as of June 30, 2009.	MSMD	<ul style="list-style-type: none"> <li>Fairfax County will use the MS4 service area mapping completed in MS4 Action ID B.2.h.3 and the county's 2009 impervious cover layer to estimate the impervious, pervious and total acres served by the MS4 as of June 30, 2009 by local watershed, sixth-order HUC and Chesapeake Bay Segment.</li> <li>The county will use data from its stormwater asset management system and GIS to estimate the impervious, pervious and total acres treated by stormwater controls as of June 30, 2009 by local watershed, sixth order HUC and Chesapeake Bay Segment.</li> </ul>	March 31, 2017 ★		The annual report due October 1, 2017 shall include the information included in Part I.B.2.h) 4). The information shall be submitted in a format specified by the Department.	The number of impervious, pervious and total acres served by the MS4 as of June 30, 2009, as well as the number of impervious, pervious and total acres treated by stormwater controls as of June 30, 2009 was submitted in the 2017 report.
B.2.h.5.	No later than 54 months after the effective of this state permit, the permittee shall update each of the following: (a) The number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment. (b) The number of impervious, pervious and total acres treated by stormwater controls.	MSMD	The update of the acreage estimates developed under MS4 Action ID B.2.h.4 above will capture "New Sources" in accordance with Part I.D.1. of the county's MS4 permit and as defined and described in DEQ's Chesapeake Bay TMDL Special Condition Guidance (GM 15-2005).		September 30, 2019 ★	The annual report due October 1, 2019 shall include an updated list of all information requested in Part I.B.2.h)5).	This was submitted during FY19, see Appendix P11 for a list of the number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment, as well as the number of impervious, pervious and total acres treated by stormwater controls.
<b>B.2.i. County Facilities</b>							
B.2.i.	Facilities owned or operated by the permittee shall be operated and maintained as follows:	MSMD	The county meets this requirement through implementation of the actions described below.				
B.2.i.1.	Good Housekeeping (a) The discharge of permittee vehicle wash water into the MS4 at permittee facilities without authorization from a separate VPDES permit shall be prohibited. (b) The discharge of wastewater into the MS4 at county facilities without authorization by a separate VPDES permit shall be prohibited. (c) The dumping of collected yard waste and grass clippings into the MS4 shall be prohibited. (d) Fluids leaked from permittee vehicles shall be prevented from entering the storm sewer system. Leaked fluids shall be cleaned up and disposed of properly, as soon as possible but no later than 24-hours after discovery.	MSMD	The county meets this requirement through implementation of the countywide "Stormwater Protection Policy" (PM No.25-01) which prohibits the discharge or disposal of specific substances into the county's storm sewer system and offers guidance on how to comply with these prohibitions. This policy applies to all county employees, facilities and vehicles and is posted on the County's intranet and included in county employee training.	▶	▶	▶	▶
B.2.i.1.e.	No later than the expiration date of this state permit, the permittee shall install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F, and on permittee properties with greater than 2-acres of impervious surface.	MSMD	<ul style="list-style-type: none"> <li>County properties with greater than 2-acres of impervious surface have been identified.</li> <li>Markers will be installed by volunteers or county personnel. Markers will be installed on stormwater inlets on high priority municipal facilities specified in B.2.i.2.a and county properties with greater than 2 acres of impervious surface.</li> </ul>	▶	▶	▶	▶
B.2.i.2.	High Priority Municipal Facilities	MSMD	The county meets this requirement through implementation of the actions described below.			March 31, 2020 ★	



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date		Annual Timeline		Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.i.2.a.	No later than 12-months after the effective date of this state permit, the permittee shall identify all high priority municipal facilities that do not require a separate VPDES industrial stormwater permit;	MSMD	<ul style="list-style-type: none"> <li>High priority municipal facilities are defined in Part I.F of the permit as “any facility owned and operated by the permittee or regulated under this state permit that includes composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.”</li> <li>The list of high priority municipal facilities that do not require a separate VPDES industrial stormwater permit was determined by answering the following three questions for each developed property owned or operated by Fairfax County:               <ol style="list-style-type: none"> <li>Does the facility meet the permit definition for a high priority municipal facility? If so, then the facility was included on the list.</li> <li>Does the facility have coverage under a separate VPDES Industrial Stormwater Permit? If so, then the facility was removed from the list.</li> <li>Are the activities occurring at the facility temporary or seasonal in nature? If so, then the facility was removed from the list.</li> </ol> </li> <li>The county submitted a list of 18 high priority municipal facilities in the FY 2016 Annual Report.</li> </ul>	March 31, 2016 ★	▶	▶	▶	The annual report due October 1, 2016 shall include a list of all high priority municipal facilities.	<ul style="list-style-type: none"> <li>Fairfax County's list of high priority municipal facilities was provided in the FY 2016 Annual Report.</li> <li>The county's MS4 program was inspected by DEQ on February 8th and 9th 2017. As a result of the inspection, the county has determined that some county-owned and operated facilities may not have been included in the high priority evaluation because they did not appear in a geographic information system (GIS) query of county-owned parcels. The list that was provided in response to the post inspection records request contained 484 county facilities. Upon further investigation, we have identified an additional 245 facilities, for a total of 729 facilities requiring evaluation. The county has revised the list of county-owned and operated facilities that include composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards based on this more comprehensive list of county facilities.</li> </ul>

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date		Annual Timeline		Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.i.2.b.	<p><i>Within 12 months of state permit coverage, the operator shall identify which of the high priority municipal facilities have a high potential of discharging pollutants. High priority municipal facilities that have a high potential for discharging pollutants are those facilities identified in subsection (a) above that are not covered under a separate VPDES permit and which any of the following materials or activities occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff:</i></p> <p>(1) <i>Areas where residuals from using, storing or cleaning machinery or equipment remain and are exposed to stormwater;</i></p> <p>(2) <i>Materials or residuals on the ground or in stormwater inlets from spills or leaks;</i></p> <p>(3) <i>Material handling equipment (except adequately maintained vehicles);</i></p> <p>(4) <i>Materials or products that would be expected to be mobilized in stormwater runoff during loading/unloading or transporting activities (e.g., rock, salt, fill dirt);</i></p> <p>(5) <i>Materials or products stored outdoors (except final products intended for outside use where exposure to stormwater does not result in the discharge of pollutants);</i></p> <p>(6) <i>Materials or products that would be expected to be mobilized in stormwater runoff contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;</i></p> <p>(7) <i>Waste material except waste in covered, non-leaking containers (e.g., dumpsters);</i></p> <p>(8) <i>Application or disposal of process wastewater (unless otherwise permitted); or</i></p> <p>(9) <i>Particulate matter or visible deposits of residuals from roof stacks, vents or both not otherwise regulated (i.e., under an air quality control permit) and evident in the stormwater runoff.</i></p>	MSMD	<ul style="list-style-type: none"> <li>Each of the high priority municipal facilities identified in MS4 Action ID B.2.i.2.a was further evaluated to identify which of these facilities have a high potential of discharging pollutants using the criteria found in Part I.B.2.i.2)b) of the MS4 permit. This evaluation determined that 21 of the 729 high priority municipal facilities also have a high potential of discharging pollutants. The county's list of 14 high priority municipal facilities with a high potential of discharging pollutants was provided in the FY 2016 Annual Report.</li> </ul>	March 31, 2016 ★				Although not a specific reporting requirement in the permit, the list of Fairfax County high priority municipal facilities with a high potential of discharging pollutants was provided in the FY 2016 Annual Report.	<ul style="list-style-type: none"> <li>Fairfax County's list of high priority municipal facilities with a high potential of discharging pollutants was provided in the FY 2016 Annual Report.</li> <li>The revised list of high priority municipal facilities has been further evaluated to determine which facilities have a high potential of discharging pollutants. High priority municipal facilities that have a high potential for discharging pollutants are those facilities that are not covered under a separate Virginia Pollutant Discharge Eliminations System (VPDES) permit and at which any of the activities listed in Part I.B.2.i.2.b(1-9) occur and are expected to have exposure to stormwater resulting from rain, snow, snowmelt or runoff. The revised list of high priority municipal facilities that have a high potential of discharging pollutants is in Appendix R6.</li> </ul>

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.i.2.c.	<i>The permittee shall develop and/or update and implement individual stormwater pollution prevention plans for each high-priority municipal facility identified under Part I.B.2.i)2)(b) no later than 36-months after the effective date of this state permit. Stormwater pollution prevention plans (SWPPP) shall include:</i> (1) A site description that includes a site map identifying all outfalls, direction of flows, existing source controls, and receiving water bodies; (2) A discussion and checklist of potential pollutants and pollutant sources; (3) A discussion of all potential non-stormwater discharges; (4) A maintenance schedule for all existing source controls; (5) All policies and procedures implemented at the facility to ensure source reduction; (6) An inspection schedule and checklist to ensure that all source reductions are continually implemented and all source controls are appropriately maintained. The date of each inspection and associated findings and follow-up shall be logged in each SWPPP; (7) Appropriate training as required in Part I.B.2.k); (8) Procedures to conduct an annual comprehensive site compliance evaluation; (9) Procedures to conduct dry weather screening; and (10) All modifications made as the result of any release or spill.	MSMD	The county will develop and implement SWPPPs for each high priority municipal facility identified as required in MS4 Action ID B.2.i.2.b. no later than March 31, 2018. The SWPPPs will include the information (items 1-10) listed in Part I.B.2.i)2)(c) of the county's MS4 permit.		▶ March 31, 2018 ★		The county evaluated the implementation of the SWPPPs, and the list of all sites can be found in Appendix R6.
B.2.i.2.d.	<i>A copy of each SWPPP shall be kept at each high-priority municipal facility and be kept updated.</i>	MSMD	A copy of the high priority municipal facility SWPPP will be kept at each facility requiring one. Where the SWPPP cannot be physically kept on site, a copy of the high priority municipal facility SWPPP will be kept on file by the department that manages the site.		▶		
<b>B.2.j. Public Education/Participation</b>							
B.2.j.	<i>The permittee shall implement a public education program with the goal of increasing the stormwater knowledge of target audiences and changing behavior to result in pollutant reductions. The permittee may fulfill all or part of the requirements of this state permit through regional outreach programs involving two or more MS4 localities.</i>	SWPD	The county meets this requirement through implementation of the actions described below.				

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline				Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.j.1.	The permittee shall identify, schedule, implement, evaluate and modify, as necessary, public outreach activities designed to meet the following public education and outreach goals:	SWPD	The county's public education program raises awareness about stormwater challenges throughout the county and offers opportunities for residents to become involved in efforts to restore and protect local waterways, the Occoquan Reservoir, the Potomac River and the Chesapeake Bay. A number of county organizations and partners contribute to the public education program including SWPD, DPWES Solid Waste Management Program (SWMP), FCPA and NVSWCD. County staff uses a variety of methods to provide public education on stormwater management and watershed basics including in-person presentations, print publications, television, radio and online resources. A new public education tool was implemented in May 2019; EnviroPod is a frequent podcast devoted exclusively to environmental topics that encourage public participation in the county's environmental efforts. The county evaluates its program annually and modifies it as necessary.	Update program by March 31, 2016 ★	▶	▶	▶	▶	Beginning with the annual report due October 1, 2016, each annual report shall include a list of permittee public outreach and education activities and the estimated number of individuals reached through the activities. An evaluation of program effectiveness, as outlined in the MS4 Program Plan, with recommendations for future changes shall also be included.	<ul style="list-style-type: none"> <li>During FY 2022, Fairfax County worked with Clean Water Partners to assess stormwater knowledge and behavior and preferences for receiving information. This effort will identify the effectiveness of the program, as well as influence future changes to the program. A summary of the survey results can be found in Appendix R7.</li> <li>See Appendix R8 for a summary of outreach and education activities and estimated number of individuals reached for each of the ten messages required in Part I.B.2.j)1) of the permit. The new programs are highlighted in blue.</li> </ul>
B.2.j.1.a.	Promote, publicize, and facilitate public reporting of the presence of illicit discharges or improper disposal of materials into the MS4;	SWPD	Fairfax County uses multiple media outlets (county Channel 16, print, website) to promote public reporting of potential illicit discharges, supported by an internal communication plan to ensure referrals of calls and other contacts are routed appropriately.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.b.	Continue to promote individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement;	NVSWCD	Fairfax County maintains a website for volunteer opportunities and utilizes multiple media outlets to promote individual and group involvement in local water quality improvement initiatives.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action B.2.j.1..	See MS4 Action ID B.2.j.1.
B.2.j.1.c.	Develop an outreach program for public and private golf courses located within the county that discharge to the permittee's MS4 to encourage implementation of integrated management practice (IMP) plans and techniques to reduce runoff of fertilizer and pesticides;	FCPA	Fairfax County implements a proactive program to reach public and private golf course managers/superintendents to promote IMP and to educate on the MS4 and water quality.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.
B.2.j.1.d.	Promote, publicize, and facilitate the proper management and disposal of used oil and household hazardous wastes;	SWMP	Fairfax County maintains proactive measures targeting residents to inform them of disposal services provided, proper disposal practices and management of material in preparation for disposal. Fairfax County supports the Clean Water Partners whose outreach programs include a focus on proper management and disposal of used oil and HHW.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline				Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)																			
B.2.j.1.e.	Promote and publicize the proper disposal of pet waste and household yard waste;	SWMP	The county maintains proactive outreach through various media outlets targeting pet owners and households on proper management of pet waste and yard waste. Outreach and education on these topics are also performed by support to regional efforts through Clean Water Partners, for example.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.																			
B.2.j.1.f.	Promote and publicize the use of the permittee's litter prevention program;	CFC	Fairfax County, through an agreement with the Clean Fairfax Council (CFC), promotes and publicizes litter prevention strategies as well as promotion through various media outlets (county Channel 16, print, website and EnviroPod podcasts).	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.																			
B.2.j.1.g.	Promote and publicize methods for residential car washing that minimize water quality impacts;	SWPD	Fairfax County uses various media for promotion of car washing methods that minimize impacts on water quality, including avoidance of discharges to storm drains and use of commercial car washes.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.																			
B.2.j.1.h.	Promote and publicize the proper use, application, and disposal of pesticides, herbicides, and fertilizers by public, commercial, and private applicators and distributors;	SWPD	Fairfax County uses various media for promotion of the proper management techniques for handling pesticides, herbicides and fertilizers to reduce impact on water quality. Partners include NVSWCD and the Clean Water Partners on proper techniques for application, storage and disposal.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.																			
B.2.j.1.i.	Encourage private property owners to implement voluntary stormwater management techniques and/or retrofits; and	NVSWCD	<ul style="list-style-type: none"> <li>Fairfax County uses existing media (county Channel 16, print, website) to encourage private property owners to implement voluntary stormwater management techniques and/or retrofits.</li> <li>The county works in partnership with NVSWCD to provide encouragement to private property owners to implement voluntary stormwater management techniques through workshops, brochures and other assistance.</li> <li>In the process of assisting owners of existing stormwater facilities that may need upgrades or would benefit from improvements, the county educates owners on options and encourages implementation.</li> </ul>	March 31, 2016 ★	▶	▶	▶	▶	<ul style="list-style-type: none"> <li>Beginning with the annual report due October 1, 2016, each annual report shall provide a summary of voluntary retrofits completed on private property used to demonstrate pollutant reduction requirements. Note that any voluntary project for which the permittee seeks to use for pollutant reduction requirements must be tracked and reported.</li> <li>Beginning with the annual report due October 1, 2016, each annual report shall provide a summary of voluntary stormwater management techniques encouraged on private property.</li> </ul>	Fairfax County has chosen not to use voluntary retrofits completed on private property to demonstrate pollutant reduction requirements at this time and as a result has not provided a summary of specific voluntary retrofits. Should the county choose to seek credit for voluntary retrofits completed on private property towards its pollutant reduction requirements in the future, such projects will be reported to DEQ and reflected in the appropriate update to the county's MS4 Program Plan.																			
										<table border="1"> <thead> <tr> <th>Voluntary Stormwater Management Techniques Encouraged on Private Property</th> <th>Number of New Private Properties Participating in FY 2022</th> </tr> </thead> <tbody> <tr> <td>Rain Garden</td> <td>6 homeowners</td> </tr> <tr> <td>Rain Barrels</td> <td>160 distributed</td> </tr> <tr> <td>Conservation Landscaping</td> <td>23 homeowners</td> </tr> <tr> <td>Impervious Surface Removal</td> <td>1 homeowner</td> </tr> <tr> <td>Dry Wells</td> <td>2 homeowners</td> </tr> <tr> <td>Porous Pavers</td> <td>2 homeowners</td> </tr> <tr> <td>Infiltration Trench</td> <td>1 homeowner</td> </tr> <tr> <td>Urban Nutrient Management Plans</td> <td>6 homeowners</td> </tr> </tbody> </table>		Voluntary Stormwater Management Techniques Encouraged on Private Property	Number of New Private Properties Participating in FY 2022	Rain Garden	6 homeowners	Rain Barrels	160 distributed	Conservation Landscaping	23 homeowners	Impervious Surface Removal	1 homeowner	Dry Wells	2 homeowners	Porous Pavers	2 homeowners	Infiltration Trench	1 homeowner	Urban Nutrient Management Plans	6 homeowners
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MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)								
B.2.j.1.j.	Target strategies towards local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts.	SWPD	Fairfax County maintains an outreach program to targeted audiences on pollution prevention through distribution of materials during inspections, on line and at public events.	March 31, 2016 ★	▶ ▶ ▶ ▶	See MS4 Action ID B.2.j.1.	See MS4 Action ID B.2.j.1.								
B.2.j.2.	The permittee shall post a copy of this state permit on its web page no later than 30-days after the effective date of this state permit and continue to retain a copy of the permit online for the duration of this state permit.	SWPD	<ul style="list-style-type: none"> <li>The county's MS4 permit (VA0088587), effective April 1, 2015, was posted to the county website on April 7, 2015.</li> <li>The permit is available at <a href="https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/va0088587-fairfax-permit.pdf">https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/va0088587-fairfax-permit.pdf</a></li> </ul>	April 30, 2015 ★	▶ ▶ ▶ ▶										
B.2.j.3.	The permittee shall post copies of each annual report on its website no later than 30 days after the report submittal to the Department and continue to retain copies of the annual reports online for the duration of this state permit.	SWPD	<ul style="list-style-type: none"> <li>Annual reports are posted to the county website within 30 days of submittal to DEQ.</li> <li>Annual reports are available at <a href="https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports">https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports</a></li> </ul>	▶ ▶ ▶ ▶ ▶											
B.2.j.4.	The permittee shall post the most current MS4 Program Plan on its website no later than 30 days after the effective date of this permit and maintain a current copy on the website. If the MS4 Program Plan is modified or revised, the updated plan shall be posted within 30 days of the revision(s). Copies of the most current MS4 Program Plan shall be made available for public review upon request of interested parties in compliance with all applicable open records requirements.	SWPD	<ul style="list-style-type: none"> <li>The county's most current MS4 Program Plan was posted to the county website on April 7, 2015.</li> <li>Updates to the MS4 Program Plan will be posted to the county's website within 30 days of submittal to DEQ.</li> <li>The MS4 Program Plan is available at: <a href="https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports">https://www.fairfaxcounty.gov/publicworks/stormwater/ms4-program-plan-and-annual-reports</a></li> </ul>	▶ ▶ ▶ ▶ ▶											
<b>B.2.k. Training</b>															
B.2.k.	The permittee shall conduct stormwater training for permittee employees. The training requirement may be fulfilled all or in part through regional training programs involving two or more MS4 localities; provided, however, that the permittee shall remain individually liable for its failure to comply with the training requirements in this state permit. The permittee shall determine the appropriate employees to receive the following types of training based on the specific topic for which training is to be provided:	SWPD	The county meets this requirement through implementation of the actions described below.												
B.2.k.1.	The permittee shall provide biennial training to appropriate field personnel in the recognition and reporting of illicit discharges.	SWPD	<p>The following biennial training is provided to appropriate field personnel:</p> <ul style="list-style-type: none"> <li>Recognition and Reporting of Illicit Discharges</li> </ul>	▶	March 31, 2017 ★	▶	March 31, 2019 ★	▶	<p>Beginning with the annual report due October 1, 2016, each annual report shall include a list of training events, the date and the estimated number of individuals attending each event.</p> <table border="1"> <thead> <tr> <th>Training Provided</th> <th>Date</th> <th>Number of Individuals Trained</th> </tr> </thead> <tbody> <tr> <td>Fairfax County MS4 Illicit Discharge Recognition and Reporting for County Personnel</td> <td>Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year.</td> <td>1,414</td> </tr> </tbody> </table>	Training Provided	Date	Number of Individuals Trained	Fairfax County MS4 Illicit Discharge Recognition and Reporting for County Personnel	Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year.	1,414
Training Provided	Date	Number of Individuals Trained													
Fairfax County MS4 Illicit Discharge Recognition and Reporting for County Personnel	Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year.	1,414													
B.2.k.2.	The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed during road, street, and parking lot	SWPD	<p>The following biennial training is provided to appropriate employees:</p> <ul style="list-style-type: none"> <li>General Good Housekeeping and Pollution</li> </ul>	▶	March 31, 2017	▶	March 31, 2019	▶	<p>Beginning with the annual report due October 1, 2016, each annual report shall include a list of training</p> <p>Fairfax County implements a combined good housekeeping training through EmployeeU, the county's learning management system. The training covers practices that are applicable during road, street, and parking lot maintenance, at maintenance and public works facilities, and at county recreation facilities.</p>						

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date		Annual Timeline		Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)		
									Training Provided	Date	Number of Individuals Trained
	<i>maintenance.</i>		Prevention Training for County Personnel					<i>events, the date and the estimated number of individuals attending each event.</i>	Fairfax County MS4 General Good Housekeeping and Pollution Prevention Training for County Personnel	Training is provided online through EmployeeU, and trainings are completed throughout the fiscal year.	493
B.2.k.3.	<i>The permittee shall provide biennial training to appropriate employees in good housekeeping and pollution prevention practices that are to be employed in and around permittee maintenance and public works facilities.</i>	SWPD	The following biennial training is provided to appropriate employees: <ul style="list-style-type: none"> <li>General Good Housekeeping and Pollution Prevention Training for County Personnel</li> </ul>	▶	March 31, 2017 ★	▶	March 31, 2019 ★	▶	See MS4 Action ID B.2.k.2	See MS4 Action ID B.2.k.2	
B.2.k.4.	<i>The permittee shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act (§3.2-3900 et seq. of the Code of Virginia). The requirements of the Virginia Pesticide Control Act are established by the Virginia Pesticide Control Board.</i>	SWPD	The county complies with this permit requirement by ensuring that employees and requiring that contractors who apply pesticides and herbicides are properly trained or certified per the Virginia Pesticide Control Act.	▶	▶	▶	▶	▶			
B.2.k.5.	<i>The permittee shall have a program to ensure that county plan reviewers, inspectors, program administrators and construction site operators (e.g. responsible land disturber) are trained and obtain the appropriate certifications to the extent required under the Virginia Erosion and Sediment Control Law and attendant regulations.</i>	LDS	Plan reviewers, inspectors, program administrators and construction site operators have received the appropriate training and certifications required under the Virginia Erosion and Sediment Control Law and attendant regulations. Records are kept by each department.	▶	▶	▶	▶	▶			
B.2.k.6.	<i>The permittee shall have a program to ensure that the applicable County employees obtain the appropriate certifications as required under the Virginia Stormwater Management Act and its attendant regulations to implement the modified stormwater management design criteria.</i>	LDS	Appropriate employees have been certified as program administrators, inspectors, plan reviewers or combined administrators as required under the Virginia Stormwater Management Act and its attendant regulations. Records are kept by each department.	▶	▶	▶	▶	▶			
B.2.k.7.	<i>The permittee shall provide biennial training to applicable employees in good housekeeping and pollution prevention practices that are to be employed in and around county recreation facilities.</i>	FCPA	Applicable FCPA employees who conduct maintenance, repair, and custodial work at county recreational facilities receive biennial training which covers the following information: <ul style="list-style-type: none"> <li>Recognition and Reporting of Illicit Discharges;</li> <li>General Good Housekeeping and Pollution Prevention Training for county Personnel</li> </ul>	▶	March 31, 2017 ★	▶	March 31, 2019 ★	▶	See MS4 Action ID B.2.k.2	See MS4 Action ID B.2.k.2	
B.2.k.8.	<i>The appropriate emergency response employees shall have training in spill response. A summary of the training and/or certification program provided to emergency response employees shall be included in the first annual report.</i>	FRD	<ul style="list-style-type: none"> <li>The FRD FHMIS Hazardous Materials Technical Support Branch will provide bi-annual MS4 training to Fire Prevention Division Inspectors and the Hazardous Materials Response Team. This training will include addressing spill prevention recommendations. This training shall be documented as part of the 1031 Fire Inspector training for the fire inspectors.</li> <li>There is also an MS4 training component for the Annual Hazmat First Responder Refresher Training requirements for all Fire Department Operational Personnel.</li> </ul>	▶	March 31, 2016 ★	▶	▶	▶	<i>The annual report due October 1, 2016 shall include documentation of employee emergency spill response training and/or certification.</i>	Fairfax County implements emergency spill response training for firefighters through the online Target Solutions system.	1391
									Hazardous Materials First Responder Operations (FRO)	Training is provided online through Target Solutions, and trainings are completed throughout the fiscal year.	

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline				Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)	
B.2.k.9.	Documentation shall be kept of all training events including the training date, number of employees attending the training, and the objective of the training event for a period of three years after each training event. Additionally, all events shall be listed in the annual report for the year in which the training event occurred.	SWPD	Training documentation is kept on file by the appropriate office. A list of training events will be provided in the MS4 Annual Reports.	March 31, 2016 ★	▶	▶	▶	▶	See MS4 Action IDs B.2.k.1, B.2.k.2 and B.2.k.8	See MS4 Action IDs B.2.k.1, B.2.k.2 and B.2.k.8	
<b>B.2.I. Water Quality Screening Programs</b>											
B.2.I.	The following screening programs shall be implemented in addition to the monitoring required by Part I.C:										
B.2.I.1.	Dry Weather Screening Program: The permittee shall continue ongoing efforts to detect the presence of illicit connections and unauthorized discharges to the permittee's MS4.	SWPD	The county meets this requirement through implementation of the actions described below.								
B.2.I.1.a.	The permittee shall continue to implement a program of dry weather screening in areas of concern as identified by the permittee including but not limited to: commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. The permittee shall screen at a minimum, 100 of the county's MS4 outfalls each year.	SWPD	<ul style="list-style-type: none"> <li>The county's Dry Weather Screening Program has three distinct field components: sample water flowing at outfalls, retesting of any outfalls that test positive for one or more analytes and tracking down of illicit discharges/ connections as necessary.</li> <li>Field screening begins after vegetation has started to die back and the outfalls are both visible and accessible. This also coincides with the time of year with the lowest average precipitation making it less likely that sampling will be prevented by a rain event. Sampling shall not take place if it has rained 0.1 inches or more in the past 48 hours. If any analyte exceeds program criteria the outfall must be retested for any of the analytes that were in exceedance within 48 hours.</li> <li>If a high concentration of an analyte is confirmed through retesting, the source of the discharge is tracked down by testing farther up the storm drain network. Discharges are sampled from upstream manholes in the storm drain network to narrow down the source of the discharge to a specific pipe segment between two manholes or the input source.</li> <li>After the source of an illicit discharge has been identified, the appropriate agency is contacted to address the discharge.</li> </ul>		▶	▶	▶	▶	▶	Each annual report shall include a list of locations upon which dry weather screening was conducted, the results and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the dry weather screening.	During FY22, the county monitored 105 outfalls. See Appendix R9 for the Dry Weather Screening Program Report.

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
B.2.1.1.b.	Criteria for selection of outfalls to be screened as required by Part I.B.2.1)(a) above shall include but is not limited to the following: (1) List of sites requiring further investigation, as previously identified; (2) Age and density of development with the likelihood of illicit connections such as older residential, commercial and industrial areas; (3) Outfalls representing the general land uses of Fairfax County; (4) Poorly maintained gas stations, service stations, and shopping centers; (5) Presence of environmentally sensitive features downstream; and (6) History of complaints received on illicit discharges.	SWPD	MS4 outfalls to be inspected are selected for sampling in part based on the presence of potential dry weather pollutant sources in their drainage area such as commercial car washes, car dealerships, pet kennels, restaurants, areas with a history of complaints, and areas upstream of sensitive ecosystems. Criteria for selection of outfalls to be screened include but are not limited to the following: 1. Outfalls identified in previous years dry weather screening and requiring further investigation; 2. Outfalls in older and more densely developed areas of the county where the likelihood of finding illicit connections is higher; 3. Outfalls with drainage areas that represent the general land uses of Fairfax County, primarily residential, with some commercial and industrial areas; 4. Outfalls with drainage areas that include gas stations, service stations, and shopping centers identified by the Industrial and High Risk Runoff (IHRR) program as being potential pollutant sources; 5. Outfalls upstream of environmentally sensitive features such as Huntley Meadows Park, stream valley parks, the Occoquan Reservoir, and resource protection areas (RPAs); and 6. Outfalls in areas with a history of complaints received on illicit discharges (referred from Illicit Discharge and Improper Disposal [IDID] program).				
B.2.1.2.	Wet Weather Screening Program: In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedure to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.	SWPD	The written wet weather screening procedures are provided in Appendix P12.	March 31, 2016 ★	October 1, 2017 ★	<ul style="list-style-type: none"> <li>No later than 12 months after the effective date of the state permit, the permittee shall submit to the Department the written procedures for wet weather screening.</li> <li>Beginning with the annual report due October 1, 2017, each annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.</li> </ul>	<ul style="list-style-type: none"> <li>The County is monitoring new sites for five years to better quantify seasonal and interannual magnitudes and variability of pollutants entering the MS4.</li> <li>See Appendix R10 for the Wet Weather Screening Program Report.</li> </ul>



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
<b>B.2.m. Infrastructure Coordination</b>							
<b>B.2.m.</b>	<i>The permittee shall coordinate with the Virginia Department of Transportation (VDOT) regarding issues of MS4 physical-interconnectivity as described below:</i>	SWPD	The county meets this requirement through implementation of the actions described below.				
<b>B.2.m.1.</b>	<i>Annual Coordination Meeting – The permittee shall meet annually with VDOT for purposes of overall coordination on priority issues for the permittee’s MS4 program plan (including operations and maintenance elements) and TMDL action planning relevant to the interconnectivity of the MS4s.</i>	SWPD	Fairfax County will meet annually with VDOT as required.		▶ ▶ ▶ ▶ ▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
<b>B.2.m.2.</b>	<i>Mapping – The permittee shall inform VDOT of the status of its mapping program, identifying any uncertainty regarding ownership or actual location of MS4 components associated with the physically-interconnected MS4s, and working to resolve such uncertainty. The permittee shall coordinate with VDOT to identify any areas within the permittee’s municipal boundaries that drain to the VDOT MS4.</i>	SWPD	<ul style="list-style-type: none"> <li>At the annual meeting (MS4 Action ID B.2.m.1), VDOT will be informed of the status of the county’s mapping program.</li> <li>The county will work with VDOT to resolve ownership and location uncertainties.</li> </ul>		▶ ▶ ▶ ▶ ▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
<b>B.2.m.3.</b>	<i>Chesapeake Bay TMDL Action Plans – The permittee shall inform VDOT of the means, methods, and schedule by which the permittee will implement the reductions required by the Chesapeake Bay TMDL Special Condition (Part I.D.1) when those means and methods may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of best management practices (BMPs) may be accelerated or otherwise improved by mutual cooperation. The permittee shall coordinate with VDOT to identify any areas within the permittee’s municipal boundaries that drain to the VDOT MS4 and are unaccounted for in the Chesapeake Bay TMDL Action Plan developed by VDOT or the permittee. The unaccounted areas shall be quantified (acres) in the Chesapeake Bay TMDL Action Plan submitted by the permittee.</i>	SWPD	<ul style="list-style-type: none"> <li>Upon completion, the county will provide a copy of the county’s Chesapeake Bay TMDL Action Plan to VDOT.</li> <li>Fairfax County will work with VDOT to identify areas that drain to the VDOT MS4 and are unaccounted for in the county’s Chesapeake Bay TMDL Action Plan.</li> <li>The county will provide the estimated acreage of these unaccounted areas in the county’s Chesapeake Bay TMDL Action Plan.</li> </ul>		▶ ▶ ▶ ▶ ▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
<b>B.2.m.4.</b>	<i>Other TMDL Action Plans – The permittee shall inform VDOT of TMDL Action Plans and major milestones implemented for other (i.e., non-Chesapeake Bay) TMDLs when those plans may impact the physically-interconnected MS4s. The parties are encouraged to cooperate with one another where the siting or design of BMPs may be accelerated or improved by mutual cooperation.</i>	SWPD	Fairfax County will provide copies of the county’s non-Chesapeake Bay TMDL Action Plans to VDOT.		▶ ▶ ▶ ▶ ▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)			
B.2.m.5.	<i>Credit for TMDL Implementation – Permit specific BMP retrofit requirements shall not be double-counted in the calculation of load reductions. If the permittee undertakes the project, the permittee shall be entitled to full credit for the project, but may share credit with VDOT on mutually agreeable terms, which shall be in writing.</i>	SWPD	The county will not count VDOT projects as credit for TMDL implementation unless mutually agreeable terms have been established in writing. Any agreements will be detailed in the county's Chesapeake Bay TMDL Action Plan.	▶	▶	▶	▶	▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.6.	<i>Illicit Discharge Detection &amp; Elimination – The permittee shall continue to be responsible for implementing a program for illicit discharge detection and elimination, including dry weather field screening, for the permittee's portion of the physically-interconnected MS4. As part of the annual coordination meeting, described in item (1) above, the permittee shall coordinate with VDOT on the identification of high risk industrial facilities. The permittee shall establish procedures for notifying VDOT when an illicit discharge is identified in the VDOT MS4.</i>	SWPD	<ul style="list-style-type: none"> <li>VDOT will be notified of any identified illicit discharges from their MS4 per the Dry Weather Screening Protocol.</li> <li>At the annual meeting (see MS4 Action ID B.2.m.1), the county will coordinate with VDOT on the identification of high risk industrial facilities.</li> </ul>	▶	▶	▶	▶	▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.7.	<i>Water Quality Monitoring – The permittee shall conduct water quality monitoring as required by Part I.B.2.l) and Part I.C of this state permit. The permittee shall make available to VDOT all monitoring data collected from areas where the physically-interconnected MS4 discharges to the VDOT MS4 or received flow from the VDOT MS4. The permittee and VDOT are encouraged to cooperate with one another to establish a joint monitoring network.</i>	SWPD	The county will provide monitoring data collected from areas impacted by VDOT discharges through web links and Annual Report results.	▶	▶	▶	▶	▶	See MS4 Action ID B.2.m.8	See MS4 Action ID B.2.m.8
B.2.m.8.	<i>Annual Reports – As part of its Annual Report, the permittee shall document any coordination efforts with VDOT that occurred during the reporting year pursuant to requirements (1) through (7) above.</i>	SWPD	The county will document the required coordination efforts with VDOT in Annual Reports.	▶	▶	▶	▶	▶	<i>As part of its Annual Report, the permittee shall document any coordination efforts with VDOT that occurred during the reporting year pursuant to requirements of Part I.B.2)m)(1) through (7).</i>	See Appendix R11 for summaries of the meeting held by the county with VDOT on January 25, 2022.
<b>C. MONITORING REQUIREMENTS</b>										
<b>C.1. Biological Stream Monitoring</b>										
C.1.	<i>The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within Fairfax County as follows:</i>	SWPD	The county meets this requirement through implementation of the actions described below.							
C.1.a.	<i>Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.</i>	SWPD	The selected sites and procedures are provided in Appendix P13.		October 1, 2016 ★				<i>The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.</i>	

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline			Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
C.1.b.	Monitoring shall be conducted twice per year with one sample collected between July 1st and December 31st and one sample collected between January 1st and June 30th each year at each selected stream site.	SWPD	Monitoring will take place twice per year at each of the five sites beginning in FY 2017. One monitoring event will take place between July 1 and December 31 and one monitoring event will take place between January 1 and June 30.	July, 1 2016 ★	▶	▶	▶	Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.	See Appendix R12 for a summary of the biological stream monitoring results.
C.1.c.	The permittee shall use a biological stream monitoring approach based on the "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" or other method approved by the Department, and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.	SWPD	The biological monitoring approach will be based on the "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers".						
<b>C.2. In-Stream Monitoring</b>									
C.2.	The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within Fairfax County as follows:	SWPD	The county meets this requirement through implementation of the actions described below.						
C.2.a.	Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.	SWPD	The selected sites and procedures are provided in Appendix P14.	October 1, 2016 ★	▶	▶	▶	The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.	
C.2.b.	Monitoring shall be conducted once per two months between January 1st and December 31st at each monitoring location.	SWPD	<ul style="list-style-type: none"> <li>Fairfax County will continue its in-stream monitoring to evaluate the condition of select stream sites within the county.</li> <li>Monitoring will take place once per two months between January 1 and December 31 beginning in FY 2017.</li> </ul>	July, 1 2016 ★	▶	▶	▶	Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.	See Appendix R13 for a summary of the in-stream monitoring results.
C.2.c.	Monitoring shall be performed for the following parameters: 1) pH 2) Dissolved Oxygen 3) Temperature 4) Total Suspended Solids 5) Ammonia as Nitrogen 6) Nitrate plus Nitrite Nitrogen 7) Total Kjeldahl Nitrogen 8) Total Nitrogen (calculated) 9) Dissolved Phosphorus 10) Total Phosphorus 11) Escherichia coli	SWPD	The monitoring program measures the parameters specified in the permit – see Appendix P14.						
C.2.d.	Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part II.A of this state permit.	SWPD	Monitoring is conducted in accordance with Part II.A of the permit – see Appendix P14.						

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline			Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
C.2.e.	The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.	SWPD	Fairfax County will follow the procedures specified in the permit if it proposes to replace a sampling location.						
<b>C.3. Floatables Monitoring</b>									
C.3.	No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The permittee will implement the floatables monitoring program as follows:	SWPD	Fairfax County developed and implemented a floatables monitoring program by March 31, 2017.	March 31, 2017 ★	▶	▶	▶		
C.3.a.	Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.	SWPD	Monitoring sites were selected to allow determination of the loading of floatables from the MS4 to streams within Fairfax County.	October 1, 2016 ★	▶	▶	▶	The annual report due October 1, 2016 shall include an update on the development of the floatables monitoring program.	
C.3.b.	Monitoring shall be conducted once per quarter after program implementation.	SWPD	Floatables monitoring is to be conducted once per quarter in accordance with the protocols provided in Appendix P15.		October 1, 2017 ★	▶	▶	The annual report due October 1, 2017 shall include the monitoring protocols for the floatables monitoring program.	See Appendix P15 for the monitoring protocols for the floatables monitoring program.
C.3.c.	The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.	SWPD	Floatables monitoring includes the count of floatables visually observed and the length or area of sites assessed.			October 1, 2018 ★	▶	Beginning with the annual report due October 1, 2018, each following annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.	See Appendix R14 for a summary of the floatables monitoring results and the list of sites.

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
	<b>C.4. Structural and Source Controls Compliance Monitoring and Tracking</b>						
C.4.a-a.	<p>The permittee shall maintain an updated electronic database of all known permittee and privately maintained stormwater management (SWM) facilities. The database shall include the following:</p> <ol style="list-style-type: none"> <li>1) The SWM facility type, address, and latitude and longitude (in decimal degrees);</li> <li>2) The total pervious and impervious acres treated;</li> <li>3) The date brought online (MMYYYY). If the date is unknown, the permittee shall use June 2005 as the date brought online for all previously existing SWM facilities;</li> <li>4) The hydrologic unit code (HUC 6) in which the SWM facility is located;</li> <li>5) The name of any impaired water segments within each HUC listed on the most recent 305(b)/303(d) Water Quality Assessment Integrated Report to which the SWM facility discharges;</li> <li>6) Whether the SWM facility is permittee or privately maintained;</li> <li>7) Whether the SWM facility discharges into the permittee's MS4;</li> <li>8) Whether a maintenance agreement exists if the SWM is privately maintained; and</li> <li>9) The date of last inspection by permittee authorities.</li> </ol> <p>All known SWM facilities brought online during each reporting year shall be submitted with the appropriate annual report as an electronic file in one of the following formats: shapefile, geodatabase, .xls, .xlsx, .csv, .mdx, .dbf, delimited text, XML, or other file approved by the Department.</p>	MSMD	<ul style="list-style-type: none"> <li>The county uses a combination of ArcGIS and a proprietary asset management system to maintain its stormwater facility inventory. The county asset management system (Infor-EAM) and GIS has been updated to include all of the required tracking metrics listed in the permit requirement (1-9).</li> <li>The county will provide a list of SWM facilities brought online each reporting year (July 1 – June 30). Facilities that provide solely peak flow control will not be included in the report in accordance with Part I.C.4.b) of the permit.</li> </ul>			<ul style="list-style-type: none"> <li>Each annual report shall include a summary of the program to ensure maintenance of private stormwater management facilities.</li> <li>Each annual report shall include a summary of the program to ensure maintenance of stormwater management facilities maintained by the permittee.</li> <li>Beginning with the annual report due October 1, 2016, each annual report shall include a copy of the updated database in electronic format.</li> </ul>	<ul style="list-style-type: none"> <li>See MS4 Action ID B.2.h.2.a.2. for a summary of the program to ensure maintenance of private stormwater management facilities.</li> <li>See MS4 Action ID B.2.h.1.b. for a summary of the program to ensure maintenance of stormwater management facilities maintained by the county.</li> <li>See Appendix R15 for a copy of the updated database that contains the list of SWM facilities brought online during FY 2022. Facilities that provide solely peak flow control will not be included in the report in accordance with Part I.C.4.b) of the MS4 permit.</li> </ul>

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline			Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)							
C.4.a-b.	No later than 36-months of the effective date of this state permit, the list shall be updated to include the required information for SWM facilities known to exist prior to the effective date of this state permit. The updated information shall be submitted with the fourth annual report.	MSMD	The county will update the list to include facilities known to exist prior to April 1, 2015 by March 31, 2018.				March 31, 2018 ★	The annual report due October 1, 2019 shall include an updated list of stormwater management facilities existing prior to the effective date of this permit.	<ul style="list-style-type: none"> <li>Section C.4 of the permit (Structural and Source Controls Compliance Monitoring and Tracking) specifies data elements and other requirements for tracking stormwater management facilities in an electronic database. In addition to maintaining an electronic database, the County is required to include an updated list of stormwater management facilities existing prior to the effective date of this permit. Fairfax County maintains a database inventory of stormwater management facilities on a regular basis, adding new facilities brought online and updating facility inspection data. County staff coordinate annually with DEQ's NPS Modeling &amp; Data Coordinator (William Keeling) to submit the most up-to-date information on the county's inventory (historic through annual reporting year) of stormwater management facilities to DEQ's online BMP Warehouse (<a href="https://apps.deq.virginia.gov/BMP/">https://apps.deq.virginia.gov/BMP/</a>). Please note that the BMP warehouse did not exist when the county's MS4 permit was written but the County has complied with DEQ requests to submit the requested information electronically via the warehouse.</li> <li>On August 28, 2018, DEQ's NPS Modeling &amp; Data Coordinator confirmed via email that the County submitted the updated inventory of Stormwater Management Facilities (5,020 facilities), including those existing prior to April 1, 2015 (permit effective date).</li> </ul>							
C.4.b.	Facilities that solely provide peak flow control as required by the Fairfax County Code are excluded from the requirements of this section. Inspection and maintenance requirements for these facilities shall be in accordance with all applicable state and local ordinances, regulations, and statutes.	MSMD	The county conducts inspections and maintenance of peak flow control facilities in accordance with the written protocols described in MS4 Action ID B.2.h.1.a. of this Program Plan.													
<b>D. TMDL ACTION PLAN AND IMPLEMENTATION</b>																
<b>D.1. Chesapeake Bay Special Condition</b>																
D.1.b.1.	No later than 24-months after the effective date of this state permit, the permittee shall develop and submit to the Department for its review and acceptance an approvable phased Chesapeake Bay TMDL Action Plan	SWPD	<ul style="list-style-type: none"> <li>The Chesapeake Bay TMDL Action Plan was submitted to DEQ on March 31, 2017.</li> <li>The Chesapeake Bay TMDL Action Plan became effective and enforceable on August 15, 2017, when DEQ approved the plan.</li> </ul>	March 31, 2017 ★	▶	▶	▶	In accordance with Part I D.1.b)1), the permittee shall submit the Chesapeake Bay TMDL Action Plan no later than 24 months after the permit effective date.	Fairfax County's Draft Chesapeake Bay TMDL Action Plan was made available for public comment in December 2016, the final plan was submitted to DEQ on March 31, 2017, and DEQ approved the plan on August 15, 2017. It is available on the county website at: <a href="https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/chesapeake-bay-tmdl.pdf">https://www.fairfaxcounty.gov/publicworks/sites/publicworks/files/assets/documents/pdf/reports/ms4/chesapeake-bay-tmdl.pdf</a>							
D.1.d.2.	Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.				October 1, 2017 ★	▶	▶	<p>Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.</p> <table border="1"> <thead> <tr> <th>TN (lbs/year)</th> <th>TP (lbs/year)</th> <th>TSS (lbs/year)</th> </tr> </thead> <tbody> <tr> <td>76,482.39</td> <td>17,007.63</td> <td>5,720,765.21</td> </tr> </tbody> </table> <p>See Appendix R16 for a summary of control measures implemented during the reporting period and the cumulative progress toward meeting the compliance targets for total nitrogen, phosphorus, and total suspended solids.</p>	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	76,482.39	17,007.63	5,720,765.21
TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)														
76,482.39	17,007.63	5,720,765.21														



MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline			Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
D.1.d.3.	Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.				October 1, 2017 ★	Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that were implemented during the reporting cycle and the estimated reduction achieved by the control. For stormwater management controls, the report shall include the information required in Part I.C.4.a) and shall include whether an existing stormwater management control was retrofitted, and if so, the existing stormwater management control type retrofit used.	See Appendix R16 for a summary of control measures implemented during the reporting period and the estimated reduction achieved by each control.
D.1.d.4.	Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.				October 1, 2017 ★	Beginning with the annual report due October 1, 2017, each annual report shall include a list of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.	<ul style="list-style-type: none"> <li>As reported in the 2017 Annual Report, Fairfax County has completed the control measures in the approved TMDL Action Plan which were over and above the 5% reduction requirement. The County will continue to report additional implemented projects annually.</li> <li>Appendix R16 contains a summary of control measures that are expected to be implemented during the next reporting period and the expected progress toward meeting the compliance targets for total nitrogen, total phosphorus, and total suspended solids.</li> </ul>
<b>D.2. TMDL Action Plans other than the Chesapeake Bay TMDL</b>									
D.2.a.1.	No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.	SWPD	<ul style="list-style-type: none"> <li>TMDL Action Plans other than the Chesapeake Bay TMDL Action Plan were submitted to DEQ on March 31, 2017.</li> <li>The TMDL Action Plans will become effective and enforceable upon written approval from DEQ.</li> </ul>				March 31, 2017 ★	No later than 24 months after the effective date of this state permit, the permittee shall submit to the Department TMDL Action Plans to address any new or modified requirements established under this Special Condition for pollutants identified in TMDL wasteload allocations approved prior to the effective date of this state permit.	Fairfax County's TMDL Action Plans other than the Chesapeake Bay TMDL were submitted to DEQ on March 31, 2017.
D.2. f.2	Beginning with the annual report due October 1, 2017, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.	SWPD	Beginning with the annual report due October 1, 2017, each annual report will include an update on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.				October 1, 2017 ★	Beginning with the annual report due October 1, 2017, the permittee shall report on the implementation of the TMDL Action Plans and associated evaluation including the results of any monitoring conducted as part of the evaluation.	See Appendix R17 for a summary of the implementation of the TMDL Action Plans.

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)														
<b>E. ANNUAL REPORTING</b>																					
<b>E.1</b>	<p>The permittee shall submit the annual report to the Department, in accordance with the following schedule:</p> <table border="1"> <thead> <tr> <th>Reporting Period</th> <th>Annual Report</th> </tr> </thead> <tbody> <tr> <td>April 1, 2015 through June 30, 2015</td> <td>October 1, 2015</td> </tr> <tr> <td>July 1, 2015 through June 30, 2016</td> <td>October 1, 2016</td> </tr> <tr> <td>July 1, 2016 through June 30, 2017</td> <td>October 1, 2017</td> </tr> <tr> <td>July 1, 2017 through June 30, 2018</td> <td>October 1, 2018</td> </tr> <tr> <td>July 1, 2018 through June 30, 2019</td> <td>October 1, 2019</td> </tr> <tr> <td>July 1, 2019 through June 30, 2020</td> <td>October 1, 2020</td> </tr> </tbody> </table>	Reporting Period	Annual Report	April 1, 2015 through June 30, 2015	October 1, 2015	July 1, 2015 through June 30, 2016	October 1, 2016	July 1, 2016 through June 30, 2017	October 1, 2017	July 1, 2017 through June 30, 2018	October 1, 2018	July 1, 2018 through June 30, 2019	October 1, 2019	July 1, 2019 through June 30, 2020	October 1, 2020	SWPD	The annual reports will be submitted in accordance with the schedule laid out in the permit.				
Reporting Period	Annual Report																				
April 1, 2015 through June 30, 2015	October 1, 2015																				
July 1, 2015 through June 30, 2016	October 1, 2016																				
July 1, 2016 through June 30, 2017	October 1, 2017																				
July 1, 2017 through June 30, 2018	October 1, 2018																				
July 1, 2018 through June 30, 2019	October 1, 2019																				
July 1, 2019 through June 30, 2020	October 1, 2020																				
<b>E.2.a.</b>	<p>Each annual report shall include the following</p> <p>a) Background Information:</p> <p>1) The permittee and permit number of the program submitting the annual report;</p> <p>2) Any modifications to the MS4 Program Plan as a result of the annual report including a summary of progress toward development and update of MS4 Program Plan components as required by Part I.A.6.;</p> <p>3) The reporting dates for which the annual report is being submitted; and</p> <p>4) Certification as per Part II.K.</p>	SWPD	All annual reports will include the required background information.			Each annual report shall include the required background information.	<ul style="list-style-type: none"> <li>This annual report is being submitted by Fairfax County, Virginia in accordance with VSMP Permit No. VA0088587.</li> <li>See MS4 Action ID A.7 for a summary of modifications to the MS4 Program Plan.</li> <li>This annual report covers July 1, 2021, through June 30, 2022.</li> <li>The certification required per Part II.K of the permit is contained in the cover letter accompanying this report.</li> </ul>														
<b>E.2.b.</b>	A summary of progress toward development of new MS4 Program components developed in accordance with the due dates as specified in the permit;	SWPD	The annual reports will include a summary of progress toward development of new MS4 Program components.																		
<b>E.2.c.</b>	A summary of the components implemented under the MS4 Program Plan and an evaluation of the effectiveness of each component. The permittee should attempt to limit any component's narrative summary to no longer than two-pages plus any necessary tables and figures;	SWPD	The annual reports will include a summary of components implemented and an evaluation of the effectiveness of each component.			Each annual report shall include a summary of components implemented and an evaluation of the effectiveness of each component.	Evaluation of program elements for effectiveness is a continuous process as implementation occurs. Staff meets on an annual basis to review and discuss the MS4 program. No significant changes in program approach or structure occurred during this reporting period. To see how the County has evaluated effectiveness for each permit element, see Appendix R18 for more detail.														
<b>E.2.d.</b>	A summary report of the monitoring programs listed under Part I.C.;	SWPD	The annual reports will include a summary of the monitoring programs listed under Part I.C.			Each annual report shall include a summary report of the monitoring programs listed under Part I.C.	See MS4 Action IDs C.1-4 for a summary of the monitoring programs listed under Part I.C. of the permit.														
<b>E.2.e.</b>	A summary of the implementation of each component listed under Part I.D.;	SWPD	The annual reports will include a summary of the implementation of components under Part I.D.			Each annual report shall include a summary of the implementation of each component listed under Part I.D.	See MS4 Action IDs D.1.d.1-4., D.2.a.1. and D.2.f.2. for a summary of the implementation of each component listed under Part I.D. of the permit.														

MS4 Action ID	Permit Requirement	Responsible Party	2022 Program Plan Elements (July 1, 2021 through June 30, 2022)	Due Date	Annual Timeline	Specific Reporting Requirement	2022 Annual Report (July 1, 2021 through June 30, 2022)
E.2.f.	<i>The Specific Reporting Requirements identified in this state permit.</i>	SWPD	The annual reports will include the Specific Reporting Requirements.	▶	▶ ▶ ▶ ▶ ▶	<i>Each annual report shall include the Specific Reporting Requirements identified in this state permit.</i>	The Specific Reporting Requirements identified in the permit are contained in the Specific Reporting Requirement column of this table.

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P1

List of Agency Acronyms Referenced in this MS4 Program Plan and Roles and Responsibilities by Agency

VSMP Permit Number  
VA0088587 9-30-2022

Agency	Permit Section	Responsibilities
<b>Clean Fairfax Council, Inc. (CFC)</b>	I.B.2.j)1)f)	Public Education: litter prevention
<b>Department of Public Works and Environmental Services (DPWES)</b>	I.A.3	Legal Authority
	I.B.2.e)	Discharges to the MS4 not authorized by this permit shall be effectively prohibited
<b>Division of Solid Waste Collection and Recycling (DSWCR)</b>	I.B.2.e)4)	Prohibit dumping or disposal of specified wastes into the MS4; implement & promote collection programs
<b>Fairfax County Park Authority (FCPA)</b>	I.B.2.j)1)c)	Public Education: golf courses
	I.B.2.k)7)	Training: good housekeeping at county recreation facilities
<b>Fairfax County Public Schools (FCPS)</b>	I.B.2.a)	Construction and Post Construction Site Runoff: ensure construction projects are conducted per County ordinances
	I.B.2.b)	Retrofits: Coordinate with County staff on retrofits on FCPS properties
	I.B.2.c)	Roadways: implement roadway SOPs; maintain list of roads, streets, and parking lots
	I.B.2.d)	Pesticides, Herbicides and Fertilizers: develop and implement NMPs as required; track and report Integrated Pest Management Plans
	I.B.2.e)	Illicit Discharges and Improper Disposal: Report any suspected illicit discharges on FCPS property to County staff; eliminate any illicit discharge identified by County staff
	I.B.2.f)	Spill Prevention and Response: Track and document spills and associated response on FCPS properties
	I.B.2.h)	Stormwater Infrastructure Management: provide stormwater facility information to County staff; inspect and maintain conveyance structures draining FCPS property
	I.B.2.i)	County Facilities: implement HP-SWPPPs at identified facilities; ensure FCPS properties have permit-required storm drain markers
	I.B.2.j)	Public Education and Participation: Implement and document stormwater education activities
	I.B.2.k)	Training: document employee certifications; train identified staff
	I.D.1.	Chesapeake Bay Special Condition: support development and implementation of the action plan
	I.D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL: support development and implementation of the action plans



<b>Agency</b>	<b>Permit Section</b>	<b>Responsibilities</b>
<b>Fire and Rescue Department (FRD)</b>	I.A.3	Legal Authority
	I.B.2.e)	Discharges to the MS4 not authorized by this permit shall be effectively prohibited
	I.B.2.f)	Spill Prevention and Response
	I.B.2.k)8)	Training: spill response for emergency response employees
<b>Health Department (HD)</b>	I.A.3	Legal Authority
<b>Land Development Services (LDS)</b>	I.B.2.a)	Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands
	I.B.2.k)5)	Training and certifications per Virginia Erosion and Sediment Control Law
	I.B.2.k)6)	Training and certifications per Virginia Stormwater Management Act
<b>Maintenance and Stormwater Management Division (MSMD)</b>	I.B.2.c)	Roadways
	I.B.2.e)3)	Discharge of floatables
	I.B.2.h)	Stormwater Infrastructure Management
	I.B.2.i)	County Facilities
	I.C.4.	Structural and Source Controls Compliance Monitoring and Tracking
<b>Neighborhood and Community Services (NCS)</b>	I.B.2.d)	Pesticide, Herbicide, and Fertilizer Application
<b>Northern Virginia Soil and Water Conservation District (NVSWCD)</b>	I.B.2.j)1)b)	Public Education: individual and group involvement in local water quality improvement initiatives
	I.B.2.j)1)i)	Public Education: voluntary stormwater management techniques
<b>Solid Waste Management Program (SWMP)</b>	I.B.2.j)1)d)	Public Education: used oil and household hazardous waste
	I.B.2.j)1)e)	Public Education: pet waste and household yard waste
<b>Stormwater Planning Division (SWPD)</b>	I.A	MS4 Program Coordination
	I.B.1	Planning
	I.B.2.b)	Retrofitting on Prior Developed Lands
	I.B.2.d)	Pesticide, Herbicide, and Fertilizer Application
	I.B.2.e)1)	Identification of non-stormwater discharges prohibited by County
	I.B.2.e)3)	Discharge of floatables
	I.B.2.e)5)	Program to locate and eliminate illicit discharges and improper disposal
	I.B.2.e)6)	Program to locate and eliminate illicit discharges and improper disposal
	I.B.2.g)	Industrial and High Risk Runoff
	I.B.2.j)2),3), 4)	Public Education/Participation Coordination
	I.B.2.j)1)a)	Public Education: illicit discharges
	I.B.2.j)1)g)	Public Education: residential car washing
	I.B.2.j)1)h)	Public Education: pesticides, herbicides, and fertilizers
I.B.2.j)1)j)	Public Education: commercial, industrial, and institutional entities	

Agency	Permit Section	Responsibilities
<b>Stormwater Planning Division (SWPD)</b>	I.B.2.k)	Training Coordination
	I.B.2.k)1)	Training: illicit discharges
	I.B.2.k)2)	Training: good housekeeping during road, street and parking lot maintenance
	I.B.2.k)3)	Training: good housekeeping at maintenance and public works facilities
	I.B.2.k)4)	Training: tracking of pesticides, herbicides and fertilizer certifications
	I.B.2.k)9)	Training: coordination of training documentation
	I.B.2.l)	Water Quality Screening Programs
	I.B.2.m)	Infrastructure Coordination
	I.C.1.	Biological Stream Monitoring
	I.C.2.	In-Stream Monitoring
	I.C.3.	Floatables Monitoring
	I.D.1.	Chesapeake Bay Special Condition
	I.D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL
<b>Wastewater Collection Division (WCD)</b>	I.B.2.e)2)	Sanitary sewer system inspection

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P2

Summary of Potential Stormwater Projects for  
Consideration of Implementation

VSMP Permit Number VA0088587  
9-30-2022

Fairfax County MS4 Permit VA0088587  
Part I.B.1. Planning:  
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation (\$)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
<b>Construction Complete:</b>													
1	Rolling Valley West Turf Field	4/1/2015	Dry Swale	1.45	0.00	1.45	\$16,700	11.62	0.39	217	Chesapeake Bay Program Retrofit Equations	PC805 (2008) Very Poor	Excellent
2	Americana Park	4/30/2015	Land Use Change	0.69	0.00	0.69	\$30,000	4.00	0.00	-	Land Use Change	AC1002 (2010) Poor	Excellent
3	Mason Neck West	5/1/2015	Constructed Wetland	12.01	1.67	10.34	\$270,360	52.77	4.35	3,011	Chesapeake Bay Program Retrofit Equations	Old Colchester Park IBI (2011) Poor MBGR02 (1999) Fair	Excellent
4	Oakton Swim & Racquet	6/4/2015	Bioretention	3.09	1.29	1.80	\$108,333	5.64	0.49	340	Chesapeake Bay Program Retrofit Equations	DF0605 (2006) Very Poor	Excellent
			Bioretention	18.73	2.55	16.18	\$108,333	39.56	2.54	1,474	Chesapeake Bay Program Retrofit Equations		
			Bioretention	21.92	3.59	18.33	\$108,333	15.35	1.03	612	Chesapeake Bay Program Retrofit Equations		
5	Difficult Run Tributary at Oakton Estates (DF9045)	6/26/2015	Stream Restoration	56.50	9.30	47.20	\$340,000	93.65	18.92	6,524	Urban Stream Restoration Protocols	DF0605 (2006) Very Poor	Excellent
6	Green Hollow Court Maintenance Improvements	8/28/2015	Outfall Restoration	1.07	0.90	0.17	\$92,868	3.79	1.74	3,322	Chesapeake Bay Program Retrofit Equations	PC1201 (2012) Very Poor	Excellent
7	Paul Spring Branch Tributary at GMP	9/10/2015	Stream Restoration	48.75	12.40	36.35	\$330,643	185.19	41.36	5,121	Urban Stream Restoration Protocols	LH0901 (2009) Poor	Excellent
8	Crestleigh Way Outfall Restoration	9/14/2015	Outfall Restoration	13.70	3.40	10.30	\$113,306	2.12	0.98	1,861	Chesapeake Bay Program Retrofit Equations	AC0402 (2004) Very Poor	Excellent
9	Lenox Drive Outfall Restoration	10/30/2015	Outfall Restoration	18.43	5.62	12.81	\$206,268	5.29	2.44	4,939	Chesapeake Bay Program Retrofit Equations	AC1202 (2012) Very Poor	Excellent
10	Rainbow Bridge Lane Outfall Restoration	12/15/2015	Outfall Restoration	2.09	1.14	0.95	\$86,637	4.20	1.11	1,946	Chesapeake Bay Program Retrofit Equations	PCSR03 (1999) Fair	Excellent
<b>Subtotal:</b>				<b>198.43</b>	<b>41.86</b>	<b>156.57</b>	<b>\$1,811,782</b>	<b>423.19</b>	<b>75.35</b>	<b>29,369</b>			
<b>In Construction:</b>													
11	George C. Marshall HS Cistern	N/A	Rainwater Harvesting	16.32	10.12	6.20	\$1,753,000	114.20	9.28	6,342	Chesapeake Bay Program Retrofit Equations	PM1202 (2012) Very Poor	Excellent
12	Penderbrook (DF9045/0691DP)	N/A	Constructed Wetland	22.53	2.60	19.93	\$105,021	71.61	5.70	3,836	Chesapeake Bay Program Retrofit Equations	DF0605 (2006) Very Poor	Excellent
13	Colony Park ( 0390DP & 0175 DP)	N/A	Constructed Wetland	68.65	19.31	49.34	\$142,823	36.60	3.60	2,785	Chesapeake Bay Program Retrofit Equations	PCSI01 (1999) Very Poor	Excellent
			Constructed Wetland	68.65	19.31	49.34	\$142,823	37.57	3.70	2,859	Chesapeake Bay Program Retrofit Equations		
			Stream Restoration	68.65	19.31	49.34	\$175,074	124.50	26.07	8,989	Urban Stream Restoration Protocols		
14	Golden Woods	N/A	Constructed Wetland	29.60	4.50	25.10	\$464,300	127.77	10.74	7,530	Chesapeake Bay Program Retrofit Equations	PNCL01 (1999) Poor	Excellent
15	Broyhill McLean	N/A	Bioretention	26.51	10.12	16.39	\$500,000	55.66	4.71	3,215	Chesapeake Bay Program Retrofit Equations	DE1001 (2010) Poor	Excellent
16	Flatlick Phase I	N/A	Constructed Wetland	8.39	3.59	4.80	\$325,765	42.18	4.74	3,913	Chesapeake Bay Program Retrofit Equations	CUFB01 (1999) Very Poor	Excellent
			Stream Restoration	2,460.00	716.00	1,744.00	\$1,725,604	1,521.85	200.45	69,108	Urban Stream Restoration Protocols		
17	Potomac Meadows Pond Retrofits	N/A	Constructed Wetland	30.02	5.49	24.53	\$66,700	58.15	5.10	3,679	Chesapeake Bay Program Retrofit Equations	PNMR01 (1999) Fair	Excellent
			Dry Swale	30.02	5.49	24.53	\$46,300	94.70	6.49	3,942	Chesapeake Bay Program Retrofit Equations		
			Constructed Wetland	2.98	0.60	2.38	\$41,750	6.02	0.54	396	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	2.98	0.60	2.38	\$29,250	9.81	0.69	424	Chesapeake Bay Program Retrofit Equations		
18	Accotink Tributary at Daventry	N/A	Stream Restoration	128.77	73.40	55.37	\$708,000	121.89	27.05	9,325	Urban Stream Restoration Protocols	AC0501 (2005) Fair	Excellent
19	Accotink Tributary 9232(Wakefield Park North)	N/A	Stream Restoration	103.00	40.00	63.00	\$880,000	64.88	58.82	38,821	Urban Stream Restoration Protocols	ACAC04 (1999) Very Poor	Excellent
20	Accotink Tributary 9210(Wakefield Park South)	N/A	Stream Restoration	279.00	99.00	180.00	\$2,901,000	202.50	183.60	121,176	Urban Stream Restoration Protocols	ACAC04 (1999) Very Poor	Excellent
<b>Subtotal:</b>				<b>3,346.07</b>	<b>1,029.44</b>	<b>2,316.63</b>	<b>\$10,007,410</b>	<b>2,689.90</b>	<b>551.28</b>	<b>286,341</b>			
<b>In Design:</b>													
21	Queen Victoria	N/A	Stream Restoration	213.76	75.96	137.80	\$3,456,587	1,483.48	327.38	112,870	Urban Stream Restoration Protocols	PC0709 (2007) Very Poor	Good
22	Bullneck at Springhill Rec Center	N/A	Stream Restoration	102.30	25.29	77.01	\$2,918,669	142.50	129.20	85,272	Urban Stream Restoration Interim Rates	BNBN01 (1999) Fair	Good
23	Franklin Park/Patton Terrace	N/A	Dry Swale	1.12	0.34	0.78	\$75,077	3.86	0.66	109	Chesapeake Bay Program Retrofit Equations	PMLP01 (1999) Poor	Good
			Infiltration	0.38	0.11	0.27	\$63,856	1.53	0.26	43	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.93	0.27	0.66	\$81,137	3.04	0.52	86	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.76	0.23	0.53	\$73,680	2.98	0.51	84	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.74	0.22	0.52	\$115,477	2.97	0.51	84	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.36	0.11	0.25	\$54,851	1.45	0.25	41	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	3.95	1.16	2.79	\$55,214	4.20	0.72	119	Chesapeake Bay Program Retrofit Equations		
			Infiltration	2.02	0.60	1.42	\$508,391	8.12	1.39	230	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	1.18	0.38	0.80	\$113,794	3.87	0.66	110	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	1.83	0.46	1.37	\$125,914	5.78	0.99	164	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.46	0.12	0.34	\$27,720	1.60	0.28	45	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.24	0.06	0.18	\$83,504	0.96	0.17	27	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.47	0.12	0.35	\$213,643	1.89	0.32	53	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.32	0.08	0.24	\$38,477	1.28	0.22	36	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	1.29	0.33	0.96	\$154,297	4.67	0.80	132	Chesapeake Bay Program Retrofit Equations		
			Infiltration	0.55	0.14	0.41	\$43,389	2.04	0.35	58	Chesapeake Bay Program Retrofit Equations		
Permeable Pavement	1.83	0.47	1.36	\$144,802	7.68	1.22	197	Chesapeake Bay Program Retrofit Equations					
Dry Swale	0.33	0.11	0.22	\$70,027	1.31	0.22	37	Chesapeake Bay Program Retrofit Equations					
24	Dead Run at Dominican Retreat	N/A	Stream Restoration	148.74	52.81	95.93	\$2,459,816	123.75	112.20	74,052	Urban Stream Restoration Interim Rates	DE1001 (2010) Poor	Good
25	Colvin Run Ph I	N/A	Stream Restoration	3,024.00	936.21	2,087.79	\$3,632,000	1,552.97	486.15	167,606	Urban Stream Restoration Protocols	DF0804 (2008) Good	Good

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Part I.B.1. Planning:  
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation (\$)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
26	Indian Run at Indian Run Court	N/A	Stream Restoration	474.80	41.10	433.70	\$3,960,000	195.00	176.80	116,688	Urban Stream Restoration Interim Rates	CA0801 (2008) Very Poor	Good
27	Quander Road outfall	N/A	Stream Restoration	16.94	3.45	13.49	\$1,023,000	62.78	56.92	37,560	Urban Stream Restoration Protocols	BE0901 (2009) Poor	Good
28	Retrofit Facility DP0625 West Potomac High School	N/A	Constructed Wetland	38.25	18.19	20.06	\$197,544	51.69	6.02	5,046	Chesapeake Bay Program Retrofit Equations	BE0601 (2006) Very Poor	Good
29	Nottoway Park retrofit Trib 1	N/A	Outfall Restoration	39.32	12.10	27.22	\$574,993	18.00	16.32	10,771	Chesapeake Bay Program Retrofit Equations	ACAC02 (1999) Poor	Good
			Outfall Restoration	27.08	9.21	17.87	\$574,993	17.25	15.64	10,322	Chesapeake Bay Program Retrofit Equations	ACAC02 (1999) Poor	Good
30	Oakford Drive stream restoration	N/A	Stream Restoration	97.92	46.67	51.25	\$998,600	112.50	102.00	67,320	Urban Stream Restoration Interim Rates	AC0502 (2005) Poor	Good
31	Flatlick Ph II	N/A	Stream Restoration	3,349.00	1,043.20	2,305.80	\$6,185,000	3,247.00	350.00	122,000	Urban Stream Restoration Protocols	CUFB01 (1999) Very Poor	Good
32	Flatlick Ph III	N/A	Stream Restoration	3,989.40	1,332.46	2,656.94	\$2,656,000	324.38	294.10	194,106	Urban Stream Restoration Interim Rates	CU0902 (2009) Poor	Good
33	Turkey Run at Truro	N/A	Stream Restoration	259.40	67.88	191.52	\$2,716,000	268.61	243.54	160,738	Urban Stream Restoration Interim Rates	ACAC04 (1999) Very Poor	Good
34	Mantua ES	N/A	Subsurface Chambers	3.68	2.49	1.19	\$475,000	0.00	0.00	-	Chesapeake Bay Program Retrofit Equations	ACAC03 (1999) Very Poor	Good
35	Dead Run Segment 2/3	N/A	Stream Restoration	716.87	274.22	442.65	\$3,300,000	210.00	190.40	125,664	Urban Stream Restoration Interim Rates	DE1001 (2010) Poor	Good
36	Pike Branch @ Wilton Road	N/A	Stream Restoration	1,288.00	478.00	810.00	\$2,000,000	101.25	91.80	60,588	Urban Stream Restoration Interim Rates	CA1201 (2012) Poor	Good
37	Lake Martin Tributaries	N/A	Stream Restoration	29.30	4.10	25.20	\$2,023,000	150.00	136.00	89,760	Urban Stream Restoration Interim Rates	DF1109 (2011) Fair	Good
38	Pohick Tributary at Green Tree Village	N/A	Stream Restoration	208.10	62.30	145.80	\$2,694,415	198.75	180.20	118,932	Urban Stream Restoration Interim Rates	PC1102 (2011) Very Poor	Good
39	Long Branch at Long Branch Falls Park	N/A	Stream Restoration	80.00	26.00	54.00	\$1,085,126	60.00	54.40	35,904	Urban Stream Restoration Interim Rates	AC0401 (2004) Poor	Good
40	Old Courthouse Spring Branch	N/A	Stream Restoration	368.95	238.18	130.77	\$4,423,000	255.00	231.20	152,592	Urban Stream Restoration Interim Rates	DF1005 (2010) Fair	Good
41	Pike Branch Tributary at Ridgeview Park	N/A	Stream Restoration	431.10	126.14	304.96	\$5,530,000	225.00	204.00	134,640	Urban Stream Restoration Interim Rates	CA1201 (2012) Poor	Good
42	Turkeycock Run at Mason District Park	N/A	Stream Restoration	109.00	27.60	81.40	\$2,940,000	127.50	115.60	76,296	Urban Stream Restoration Interim Rates	CA1301 (2013) Poor	Good
43	Crook Branch	N/A	Stream Restoration	811.34	275.88	535.46	\$2,900,000	217.50	197.20	130,152	Urban Stream Restoration Interim Rates	ACAC03 (1999) Very Poor	Good
44	Windy Hill Stream Restoration	N/A	Stream Restoration	31.30	7.00	24.30	\$790,000	48.75	44.20	29,172	Urban Stream Restoration Interim Rates	SCSC01 (1999) Very Poor	Good
45	Indian Run at Columbia Road	N/A	Stream Restoration	466.86	246.36	220.50	\$850,000	27.00	24.48	16,157	Urban Stream Restoration Interim Rates	CA0801 (2008) Very Poor	Good
46	Lower Potomac Ball Park	N/A	Pond Retrofit	29.50	8.20	21.30	\$910,000	119.52	4.75	5,757	Chesapeake Bay Program Retrofit Equations	PCPC04 (1999) Fair	Good
47	Leigh Meadows	N/A	Pond Retrofit	8.80	2.20	6.60	\$2,000,000	36.94	1.42	1,697	Chesapeake Bay Program Retrofit Equations	DF0805 (2008) Fair	Good
			Stream Restoration					67.50	61.20	40,392	Urban Stream Restoration Interim Rates		
48	Centreville Green Pond 1	N/A	Pond Retrofit	38.24	31.34	6.90	\$440,000	304.08	17.35	24,547	Chesapeake Bay Program Retrofit Equations	LR0901 (2009) Poor	Good
49	Centreville Green Pond 2	N/A	Pond Retrofit	19.90	15.60	4.30	\$470,000	97.93	5.50	7,742	Chesapeake Bay Program Retrofit Equations	LR0901 (2009) Poor	Good
50	Luther Jackson Middle School	N/A	Pond Retrofit	42.50	37.50	5.00	\$300,000	251.25	14.71	20,989	Chesapeake Bay Program Retrofit Equations	AC0901 (2009) Very Poor	Good
			Bioretention	0.30	0.30	0.00	\$30,000	3.54	0.28	263	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.46	0.46	0.00	\$30,000	5.42	0.42	403	Chesapeake Bay Program Retrofit Equations		
			Land Use Change	0.09		0.09	\$10,000	0.52	0.00	-	Land Use Change		
			Dry Swale	0.45	0.45	0.00	\$20,000	5.30	0.41	395	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.07	0.07	0.00	\$10,000	0.82	0.06	61	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.18	0.18	0.00	\$60,000	2.12	0.17	158	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.16	0.16	0.00	\$50,000	1.89	0.15	140	Chesapeake Bay Program Retrofit Equations		
			Tree Plantings	0.30	0.00	0.30	\$10,000	2.28	0.11	40	Chesapeake Bay Program Retrofit Equations		
			Wet Swale	3.30	2.10	1.20	\$140,000	28.16	1.47	2,016	Chesapeake Bay Program Retrofit Equations		
51	West Ox Bus Operations Center Expansion	N/A	Permeable Pavement	0.08	0.08	0.00	\$5,501	0.80	0.09	73	Chesapeake Bay Program Retrofit Equations	LRLR001 (1999) Very Poor	Good
			Permeable Pavement	0.42	0.42	0.00	\$83,249	4.16	0.49	380	Chesapeake Bay Program Retrofit Equations		
52	Innovation Station	N/A	Bioretention	0.76	0.76	0.00	\$170,000	9.22	0.72	686	Chesapeake Bay Program Retrofit Equations	HC0802 (2008) Poor	Good
53	Bucknell ES	N/A	Dry Swale	0.18	0.03	0.15	\$9,827	1.31	0.09	52	Chesapeake Bay Program Retrofit Equations	LH0701 (2007) Poor	Good
			Dry Swale	0.23	0.15	0.08	\$9,394	2.15	0.22	161	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.32	0.12	0.20	\$750	2.40	0.20	137	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	0.08	0.01	0.07	\$6,109	0.56	0.03	19	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.14	0.14	0.00	\$40,989	1.52	0.18	139	Chesapeake Bay Program Retrofit Equations		
			Permeable Pavement	0.44	0.06	0.38	\$23,082	3.13	0.20	117	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.10	0.10	0.00	\$13,463	1.09	0.43	100	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.15	0.15	0.00	\$16,454	1.64	0.19	150	Chesapeake Bay Program Retrofit Equations		
Filtering Practices	0.11	0.06	0.05	\$12,500	0.55	0.07	57	Chesapeake Bay Program Retrofit Equations					
54	Newington Forest ES	N/A	Infiltration	0.67	0.67	0.00	\$38,989	7.51	0.59	559	Chesapeake Bay Program Retrofit Equations	PCSR03 (1999) Fair	Good
			Land Use Change	0.10	0.00	0.10	\$2,514	0.58	0.00	-	Land Use Change		
			Land Use Change	0.17	0.00	0.17	\$3,681	0.99	0.00	-	Land Use Change		
			Tree Plantings	0.14	0.00	0.14	\$13,387	1.00	0.05	19	Land Use Change		
55	Cherry Run ES	N/A	Dry Swale	0.59	0.48	0.11	\$64,200	6.59	0.48	446	Chesapeake Bay Program Retrofit Equations	PC1104 (2011) Very Poor	Good
			Bioretention	0.53	0.17	0.36	\$34,900	5.02	0.27	218	Chesapeake Bay Program Retrofit Equations		
			Dry Swale	1.44	0.05	1.39	\$69,500	11.82	0.42	258	Chesapeake Bay Program Retrofit Equations		



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Part I.B.1. Planning:  
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#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation (\$)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
56	South Lakes HS	N/A	Infiltration	0.77	0.70	0.07	\$85,000	5.62	0.43	401	Chesapeake Bay Program Retrofit Equations	DF1012 (2010) Fair	Good
			Filterra	0.77	0.70	0.07	\$23,000	6.51	0.49	464	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.24	0.23	0.01	\$18,000	2.07	0.16	151	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.25	0.24	0.01	\$18,000	2.16	0.17	158	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.56	0.51	0.05	\$18,000	4.74	0.36	338	Chesapeake Bay Program Retrofit Equations		
			Filterra	0.27	0.26	0.01	\$18,000	2.33	0.18	171	Chesapeake Bay Program Retrofit Equations		
			Filterra	1.67	1.50	0.17	\$27,500	14.05	1.06	996	Chesapeake Bay Program Retrofit Equations		
57	West Springfield HS	N/A	Permeable Pavement	0.73	0.44	0.29	\$63,170	6.71	0.66	483	Chesapeake Bay Program Retrofit Equations	PCPC02 (1999) Very Poor	Good
			Permeable Pavement	1.12	0.96	0.17	\$21,653	0.00	0.00	-	Chesapeake Bay Program Retrofit Equations		
			Bioretention	0.46	0.37	0.09	\$27,545	4.66	0.51	384	Chesapeake Bay Program Retrofit Equations		
<b>Subtotal:</b>				<b>16,501.91</b>	<b>5,546.02</b>	<b>10,955.89</b>	<b>\$67,825,350</b>	<b>10,318.04</b>	<b>3,912.57</b>	<b>2,247,583</b>			

**Scoping Projects**

58	Belgravia Court Outfall Restoration	N/A	Outfall Restoration	25.30	3.28	22.02	Note 1	Note 1	Note 1	Note 1	Chesapeake Bay Program Retrofit Equations	NINI01 (1999) Excellent	Good
59	Brevity Drive Outfall Restoration	N/A	Outfall Restoration	82.49	11.22	71.27	\$280,000	15.00	13.60	8,976	Chesapeake Bay Program Retrofit Equations	DF0602 (2006) Poor	Good
60	Bush Hill Outfall Restoration	N/A	Outfall Restoration	35.91	10.38	25.54	\$350,000	18.75	17.00	11,220	Chesapeake Bay Program Retrofit Equations	N/A (flows into City of Alexandria)	Good
61	Forest Villa Lane 1537 Outfall Restoration	N/A	Outfall Restoration	41.08	10.03	31.05	Note 1	Note 1	Note 1	Note 1	Chesapeake Bay Program Retrofit Equations	PM0601 (2006) Very Poor	Good
62	Forest Villa Lane 1558 Outfall Restoration	N/A	Outfall Restoration	50.43	12.14	38.29	Note 1	Note 1	Note 1	Note 1	Chesapeake Bay Program Retrofit Equations	PM0601 (2006) Very Poor	Good
63	Pratt Street Outfall Restoration	N/A	Outfall Restoration	89.57	32.81	56.77	\$140,000	7.50	6.80	4,488	Chesapeake Bay Program Retrofit Equations	CA1002 (2010) Poor, CABA01 (1999) Very	Good
64	Toll House Road Outfall Restoration	N/A	Outfall Restoration	24.58	6.41	18.17	\$280,000	15.00	13.60	8,976	Chesapeake Bay Program Retrofit Equations	ACAC04 (1999) Very Poor	Good
65	Wellfleet Court Outfall Restoration	N/A	Outfall Restoration	24.80	8.91	15.90	\$70,000	3.75	3.40	2,244	Chesapeake Bay Program Retrofit Equations	PM0904 (2009) Very Poor	Good
66	Jefferson Fire Station	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	CATR01 (1999) Very Poor	Good
67	John Marshall Library	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	CA0802 (2008) Very Poor	Good
68	Lorton Volunteer Fire Station	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	PCPC04 (1999) Fair	Good
69	McLean Community Center	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	DE1301 (2013) Missing, DE1001 (2010)	Good
70	Oakton HS	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	ACAC02 (1999) Poor	Good
71	Mount Vernon Woods ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	DC1102 (2011) Very Poor, DCNF01 (1999)	Good
72	Belle View ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	BE0901 (2009) Poor	Good
73	Waynewood ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	N/A (drains directly to Potomac River)	Good
74	White Oaks ES	N/A	LID Site Retrofit	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	Note 2	PC1303 (2013) Missing, PC1006 (2010) Poor, PCPC02 (1999) Very Poor	Good
75	Centre Ridge Pd 6 Sec 12D-1 (0736DP)	N/A	Pond Retrofit (0736DP)	52.90	20.00	32.90	\$642,000	268.37	11.72	14,924	Chesapeake Bay Program Retrofit Equations	N/A	Good
76	Flint Hill Manor Townhouses	N/A	Pond Retrofit (0073DP)	50.70	27.10	23.60	\$200,000	76.02	3.73	5,000	Chesapeake Bay Program Retrofit Equations	ACAC01 (1999) Very Poor	Good
77	D'Evereaux West Sec 2	N/A	Pond Retrofit (0226DP)	51.59	11.90	39.69	\$429,000	257.30	9.70	11,410	Chesapeake Bay Program Retrofit Equations	DC1201 (2012) Poor	Good
78	Ashburton Manors Sec 1	N/A	Pond Retrofit (1001DP)	17.60	6.80	10.80	\$200,000	47.47	2.09	2,667	Chesapeake Bay Program Retrofit Equations	HC1002 (2010) Very Poor	Good
79	Beverly Manor	N/A	Pond Retrofit (0193DP)	43.50	28.10	15.40	\$200,000	66.14	3.47	4,768	Chesapeake Bay Program Retrofit Equations	DE0601 (2006) Very Poor	Good
80	London Towne West Sec 2	N/A	Pond Retrofit (0326DP)	40.33	15.70	24.63	\$390,000	175.37	7.73	9,890	Chesapeake Bay Program Retrofit Equations	CU1204 (2012) Poor	Good
81	Big Rocky Forest Regional Pond C-30	N/A	Pond Retrofit (0865DP)	189.71	61.30	128.41	\$1,655,000	839.87	34.91	43,360	Chesapeake Bay Program Retrofit Equations	CU1001 (2010) Poor	Good
82	Sully Station Ph 2 Pd 7	N/A	Pond Retrofit (0964DP)	59.48	31.90	27.58	\$525,000	206.16	10.13	13,581	Chesapeake Bay Program Retrofit Equations	CU1204 (2012) Poor	Good
83	Rosehaven Estates	N/A	Pond Retrofit (1235DP)	31.94	12.30	19.64	\$200,000	86.99	3.82	4,880	Chesapeake Bay Program Retrofit Equations	ACAC01 (1999) Very Poor	Good
84	Middleton Farm Sec 1	N/A	Pond Retrofit (1349DP)	36.86	15.50	21.36	\$398,000	166.65	7.54	9,754	Chesapeake Bay Program Retrofit Equations	HC1002 (2010) Very Poor	Good
85	Piney Branch Rd, Rt 29 Improvements	N/A	Pond Retrofit (DP0361)	31.42	19.20	12.22	\$280,000	102.70	5.28	7,208	Chesapeake Bay Program Retrofit Equations	PHPI01 (1999) Very Poor	Good
86	Upper Wolftrap Creek Reg Pond	N/A	Pond Retrofit (0003DP)	293.42	137.80	155.62	\$1,514,000	703.28	33.02	43,430	Chesapeake Bay Program Retrofit Equations	DFWC01 (1999) Very Poor	Good
87	Reston Sec 48 Blks 2, 3	N/A	Pond Retrofit (0111DP)	24.04	10.60	13.44	\$200,000	57.51	2.64	3,444	Chesapeake Bay Program Retrofit Equations	DF0703 (2007) Very Poor	Good
88	Seven Oaks Sec 1 Pd 1	N/A	Pond Retrofit (0351DP)	10.68	6.40	4.28	\$200,000	35.08	1.79	2,439	Chesapeake Bay Program Retrofit Equations	CA1303 (2013) Very Poor	Good
89	Copper Crossing Sec 1 Pd 1	N/A	Pond Retrofit (0426DP)	8.94	2.30	6.64	\$200,000	54.69	2.12	2,544	Chesapeake Bay Program Retrofit Equations	HCHC02 (1999) Very Poor	Good
90	Fairland Towns	N/A	Pond Retrofit (0790DP)	17.60	8.40	9.20	\$200,000	58.14	2.74	3,618	Chesapeake Bay Program Retrofit Equations	CA0601 (2006) Fair	Good
91	Brittenford Dr.	N/A	Stream Restoration	379.30	30.20	349.10	\$5,005,000	288.75	261.80	172,788	Urban Stream Restoration Interim Rates	DF1205 (2012) Poor	Good
92	Greendale Golf Course (DC9214)	N/A	Stream Restoration	268.84	24.35	244.49	\$2,866,500	165.38	149.94	98,960	Urban Stream Restoration Interim Rates	DC1201 (2012) Poor	Good
93	Scotts Run - South (Stream Valley Park)(SC234/SC232)	N/A	Stream Restoration	600.00	418.00	182.00	\$2,925,000	168.75	153.00	100,980	Urban Stream Restoration Interim Rates	SCSC01 (1999) Very Poor	Good
94	Snakeden Branch(DF92102)	N/A	Stream Restoration	212.20	95.47	116.73	\$3,341,000	192.75	174.76	115,342	Urban Stream Restoration Interim Rates	DFSB02 (1999) Poor	Good
95	Greendale Golf Course(DC9213)	N/A	Stream Restoration	260.84	24.35	236.49	\$3,035,500	175.13	158.78	104,795	Urban Stream Restoration Interim Rates	DC1201 (2012) Poor	Good
96	Rabbit Branch Trib @ Collingham Dr(PC9256)	N/A	Stream Restoration	271.33	32.62	238.71	\$5,850,000	225.00	204.00	134,640	Urban Stream Restoration Interim Rates	PC0904 (2009) Very Poor	Good
97	Colvin Run - Ph II Trib	N/A	Stream Restoration	254.00	253.69	0.31	\$2,600,000	150.00	136.00	89,760	Urban Stream Restoration Interim Rates	DFCR02 (1999) Poor	Good
98	Unnamed Trib to Sideburn Branch(PC9241)	N/A	Stream Restoration	145.60	46.28	99.32	\$4,680,000	270.00	244.80	161,568	Urban Stream Restoration Interim Rates	PC1402 (2014) Very Poor	Good
99	Flag Run DS 495(AC9229)	N/A	Stream Restoration	351.30	130.23	221.07	\$3,185,000	183.75	166.60	109,956	Urban Stream Restoration Interim Rates	AC0503 (2005) Very Poor	Good
100	Old Courthouse Spring Branch - Phase II	N/A	Stream Restoration	421.50	255.58	165.92	\$1,560,000	90.00	81.60	53,856	Urban Stream Restoration Interim Rates	DF1005 (2010) Fair	Good

Fairfax County MS4 Permit VA0088587  
Part I.B.1. Planning:  
Updated Summary of Potential Stormwater Management Projects

#	Project Name	Substantial Completion	Type of Project or BMP	Number of Acres Treated	Impervious Acres Treated	Pervious Acres Treated	Estimated Cost of Implementation (\$)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method (Note 3, Note 4)	Condition of the Downstream Channel (Index of Biological Integrity)	Feasibility for Implementation
								TN	TP	TSS			
101	Rabbit Branch Trib @ Tapestry Dr (PC9268)	N/A	Stream Restoration	243.57	25.67	217.90	\$5,200,000	300.00	272.00	179,520	Urban Stream Restoration Interim Rates	PCRA01 (1999) Poor	Good
102	Cove Creek @ Wakerobin	N/A	Stream Restoration	50.00	43.25	6.75	\$1,027,000	59.25	53.72	35,455	Urban Stream Restoration Interim Rates	DF1012 (2010) Fair	Good
103	Danbury Forest	N/A	Stream Restoration	248.00	71.54	176.46	\$1,300,000	75.00	68.00	44,880	Urban Stream Restoration Interim Rates	AC1101 (2011) Very Poor	Good
104	Young Branch (PH9204B&C)	N/A	Stream Restoration	337.00	12.00	325.00	\$4,940,000	285.00	258.40	170,544	Urban Stream Restoration Interim Rates	PH1102 (2011) Good	Good
105	Flag Run US 495	N/A	Stream Restoration	394.92	130.23	264.69	\$1,690,000	97.50	88.40	58,344	Urban Stream Restoration Interim Rates	AC0503 (2005) Very Poor	Good
106	Coon Branch at Annandale Park	N/A	Stream Restoration	595.59	175.92	419.67	\$1,677,000	96.75	87.72	57,895	Urban Stream Restoration Interim Rates	AC1002 (2010) Poor	Good
<b>Subtotal:</b>				<b>6,368.87</b>	<b>2,279.84</b>	<b>4,089.03</b>	<b>\$59,435,000</b>	<b>6,084.72</b>	<b>2,756.37</b>	<b>1,908,106</b>			
<b>Total:</b>				<b>26,415.28</b>	<b>8,897.16</b>	<b>17,518.12</b>	<b>\$139,079,542</b>	<b>19,515.85</b>	<b>7,295.57</b>	<b>4,471,399</b>			

# Projects are first prioritized based on their completion status in the following order: Completed Projects; In Construction Projects; In Design Projects; and, Scoping Projects. Final prioritization and decisions about the project selections that are ultimately implemented are made by the County based on multiple factors, including site-specific considerations, as well as approval by the County Board of Supervisors.

Note 1 Projects which have been identified as needing restoration but lack sufficient design details to provide cost and pollutant reduction.

Note 2 Site retrofit projects that will be incorporated as a partnership with other county agencies' capital improvement programs.

Note 3 The stream restoration protocols were used instead of the interim rates when the County had the specific data necessary to support the more precise protocols.

Note 4 Pollutant reduction calculation methods (i.e. efficiency sources) are for planning purposes. The final efficiency sources will be documented in the County's Chesapeake Bay TMDL Action Plan.

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P3

More Stringent Stormwater and Erosion and  
Sediment Control Legal Authorities

VSMP Permit Number VA0088587  
9-30-2022

Erosion and Sedimentation Control Ordinance - Sections more Stringent<sup>1</sup> than State Law and Virginia Administrative Code

Co. E&S Ordinance PFM Section	Standard and Specification <sup>2</sup>	Virginia E&S Law/Regulations	County Requirements that are More Stringent than Virginia E&S Law/Regulations
§ 104-1-8(a)(1)	Std. & Spec. #3.04 Straw Bale Barriers	VESCH Std&Spec 3.04	Rebar not allowed for stakes, practice not allowed for perimeter control.
§ 104-1-8(a)(2)	Std. & Spec. #3.06 Brush Barrier	VESCH Std&Spec 3.06	Practice only allowed with specific authorization of the Director
§ 104-1-8(a)(3)	Std. & Spec. #3.07 Storm Drain Inlet Protection	VESCH Std&Spec 3.07	Configurations which completely block inlet not allowed; Straw bale and cinder block wrapped in fabric not allowed.
§ 104-1-8(a)(4) PFM §11-0106.2B	Std. & Spec. #3.13 Temporary Sediment Trap	VESCH Std&Spec 3.13	When in RPAs: increased storage requirement to 202 CY/ac.; pipe outlet may be required for < 1 ac, and stone outlet required
§ 104-1-8(a)(5) PFM §11-0106.2C	Std. & Spec. #3.14 Temporary Sediment Basin	VESCH Std&Spec 3.14	When in RPAs: increased storage requirement to 202 CY/ac
§ 104-1-8(a)(6)	Std. & Spec. #3.34 Bermuda Grass and Zoysia Grass Establishment	VESCH Std&Spec 3.34	Practice not allowed in the County.
§ 104-1-8(a)(7)	Std. & Spec. #3.38 Tree Preservation and Protection	VESCH Std&Spec 3.38	VESCH section not to be used. In its place, PFM Chapter 12 shall be used.
§ 104-1-8(a)(8) PFM §11-0106.2D	Std. & Spec. #3.02 Temporary stone construction entrance	VESCH Std&Spec 3.02	Required minimum length of 75 feet; filter fabric underliner; and specifies wash rack may be required.
§ 104-1-8(a)(9) PFM §11-0304.7	Std. & Spec. #3.31 Temporary Seeding	VESCH Std&Spec 3.31	Mulch is always required for temporary seeding; winter stabilization required after Nov. 1.

FOOTNOTES			
<p>1) Pursuant to § 62.1-44.15:65.A and B of the Code of Virginia, the County is authorized to have an VESCP program that contains more stringent soil erosion and sediment control regulations and ordinances than those necessary to ensure compliance with the Regulations (9 VAC 25-840 et seq.), provided that any more stringent provisions that become effective on or after July 1, 2012, are based on certain factual findings and reported to the Water Control Board.</p>			
<p>2) Conservation standards listed in § 104-1-8(a) of the County Code, and corresponding provisions in PFM § 11-0106.2, are the Standards and Specifications as contained in the Virginia and Erosion and Sediment Control Handbook (VESCH), third edition (1992), with modifications as listed in § 104-1-8(a)(1) through (10), which are mandatory in the County.</p>			



Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P4

Stormwater Ordinance Stringency Table

VSMP Permit Number VA0088587  
9-30-2022

## Stormwater Management Ordinance Stringency Table

<i>Ordinance Section</i>	<i>County Ordinance Title</i>	<i>Virginia Law/Regulations</i>	<i>County Requirements More Stringent than State Law/Regulations</i>	<i>Pre-existing County Requirements that are More Stringent than the 2014 State Law/Regulations</i>
§ 124-1-7.3	Exemptions - Single Family Detached residential lots, separately built	§ 62.1-44.15:34C	The exemption for single-family residences that are not part of a common plan of development is more restrictive than the full exemption provided in the Stormwater Management Act but within the authority granted by the Act to Chesapeake Bay localities.	Land disturbances exceeding 2,500 square feet are currently required to provide a plan that addresses erosion, sedimentation, and stormwater drainage. Under the Chesapeake Bay Preservation Ordinance (Code Chapter 118, adopted 1993, revised 2003), if impervious area exceeds 18% of the property a water quality BMP is required.  Note: The proposed residential exemption that allows up to 2,500 total square feet of impervious area after construction, is less stringent than the County Chesapeake Bay Preservation Ordinance.
§ 124-4-2.	Water Quality Design Criteria Requirements.	9 VAC 25-870-63	The County's stormwater management requirements for development within the Water Supply Protection Overlay District (WSPOD) may be more stringent than minimum state requirements for redevelopment.	The WSPOD requirements have been in effect since 1980 and are derived from the Zoning Ordinance.
§ 124-4-3.	Water Quality Compliance.	9 VAC 25-870-65	The PFM limits the use and location of specific BMPs on single family residential lots and limits the maximum drainage area for grass channels and filtering practices.	The limitations are based on constraints within the PFM (adopted 2011), recommended limits within the state specifications, or are based on lessons learned from county experience with design and maintenance of certain BMP types.
§ 124-4-3.	Water Quality Compliance.	9 VAC 25-870-65	New BMPs approved by the Virginia BMP Clearinghouse must also be approved by the County prior to use.	The PFM (adopted June 2011) stated in Section 6-0402.4 that other innovative BMP measures may be permitted but, due to the design variables that could affect their appropriateness, requests for use of these techniques will be reviewed on a case by case basis and approved by the Director as appropriate.
§ 124-4-4.B	Water Quantity. Channel Protection	9 VAC 25-870-66	Requirements for channel protection and flooding (e.g. "adequate outfall") are more stringent than minimum requirements of the State Regulations.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.

## Stormwater Management Ordinance Stringency Table

<i>Ordinance Section</i>	<i>County Ordinance Title</i>	<i>Virginia Law/Regulations</i>	<i>County Requirements More Stringent than State Law/Regulations</i>	<i>Pre-existing County Requirements that are More Stringent than the 2014 State Law/Regulations</i>
§ 124-4-4.B.3.a	Water Quantity. Channel Protection	9 VAC 25-870-66.B.3	Pre-development is assumed to be "good forested condition" when utilizing the County's detention method, which reduces the post-development peak discharge to below state requirements and increases the required detention volume. The state only requires detention be provided assuming the pre-development condition, not "good forested". An option has been added that if an applicant can demonstrate that the outfall is adequate, then existing conditions can be used in lieu of "good forested condition" to determine detention requirements for the 1-year storm when discharge is to a natural channel.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.B.3.a	Water Quantity. Limits of Analysis for Channel Protection	9 VAC 25-870-66	Outfall channels must be analyzed for erosion to the limits of analysis unless onsite detention is provided using the County's detention method and pre-development is assumed to be "good forested condition". Whether or not onsite detention is provided, the applicant must demonstrate that a "defined channel or man-made drainage facility" exists for the full limits of analysis. Under the state regulations, if onsite detention is provided such that the 1-year storm discharge meets the energy balance equation for pre-development conditions, no outfall analysis is required.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.C.3	Water Quantity. Flood Protection	9 VAC 25-870-66	Definition of localized flooding added.	This is consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.C.5	Water Quantity. Limits of Analysis for Flood Protection	9 VAC 25-870-66	Outfall channels must be analyzed for flooding to the limits of analysis unless onsite detention is provided for the 2-year and 10-year storm event using the County's detention method and pre-development is assumed to be "good forested condition". Whether or not onsite detention is provided, the applicant must demonstrate that a "defined channel or man-made drainage facility" exists for the full limits of analysis and check for flooding of downstream structures during the 100-year event. Under the state regulations, if detention is provided such that the 10-year storm discharge is less than the 10-year pre-development peak discharge, no outfall analysis for flooding is required.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.

## Stormwater Management Ordinance Stringency Table

<i>Ordinance Section</i>	<i>County Ordinance Title</i>	<i>Virginia Law/Regulations</i>	<i>County Requirements More Stringent than State Law/Regulations</i>	<i>Pre-existing County Requirements that are More Stringent than the 2014 State Law/Regulations</i>
§ 124-4-4.C.5	Water Quantity. Flood Protection	N/A	Required detention of the post-development peak rate 100-year such that it does not exceed the pre-development 100-year peak discharge if an existing dwelling or a building constructed under an approved building permit is located within the limits of downstream analysis, is flooded.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.D	Water Quantity.	9 VAC 25-870-66	Unless waived by the Director of DPWES, detention must be provided such that the 2-year and 10-year post-development peak discharge from the site does not exceed the pre-development 2-year and 10-year peak discharges.	These requirements are consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.
§ 124-4-4.D	Water Quantity.	9 VAC 25-870-66	In the Four Mile Run watershed, the post-development peak flow for the 100-year storm event must be equal to or less than the predevelopment peak flow rate from the 100-year storm unless it is contraindicated by the watershed model developed for the Four Mile Run Watershed Management Program.	This requirement is consistent with provisions in the PFM (adopted June 2011) in existence at the of and prior to adoption of the County's SWMO.

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P5

Roadways SOP's - Street Sweeping

VSMP Permit Number VA0088587  
9-30-2022





Department of Public Works and Environmental Services  
**POLICIES AND PROCEDURES**

Memorandum No.: MSMD18-11

**SUBJECT: Parking Lot and Street Sweeping SOP**

Effective: 3/27/2018

Revised: 6/18/2019

Approval:

## **I. Purpose**

This standard operating procedure (SOP) is to be followed for sweeping operations on County maintained roadways, parking lots and other paved surfaces in order to minimize non-stormwater discharges into the Municipal Separate Storm Sewer System (MS4).

This SOP will satisfy the following MS4 permit section:

*“IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*

- 1) No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
- 2) No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
- 3) Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
- 4) The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces.”*

## **II. Responsible Parties**

- 1. Maintenance and Stormwater Management Division (MSMD) – utilizes a contractor to provide street sweeping for some County facilities and roadways (other than parks and landfills). A list of these locations is maintained by MSMD, and includes facilities such as libraries, police and fire stations, schools and County government centers.*
- 2. Fairfax County Public Schools (FCPS) – utilizes the County’s sweeping contract to provide street sweeping for FCPS sites. FCPS provides all coordination and invoice approval of sweeping at their sites. A list of these locations is maintained by FCPS.*

3. *Fairfax County Park Authority (FCPA)* – provides in-house street sweeping services for County park facilities. The Park Operations Division (POD) is divided into six (6) maintenance areas throughout the County and a mobile crew that provides backup on a County wide basis. Each maintenance area is assigned specific sites to sweep as needed throughout the year. A list of sites for each maintenance area is maintained by POD.
4. *Solid Waste Management Program (SWMP)* – provides in-house street sweeping at the I-95 Landfill Complex and the I-66 Transfer Station as well as the Government Center Complex and Public Safety and Transportation Operations Center. A list of these facilities is maintained by SWMP.
5. Additional County agencies, such as Wastewater Collections Division (WCD), Wastewater Treatment Division (WTD), and Housing provide in-house street sweeping for their facilities on an as needed basis. A list of these facilities is maintained by each responsible agency.
6. *Program Manager* – employed by the County leads the Roadways tactical team and oversees the daily activities of the County’s street sweeping operations, as well as manages the day to day operations of the County’s street sweeping contract. Coordinates with all responsible parties to manage and update the Parking Lot and Street Sweeping SOP.
7. *Contract Manager* – employed by the County; manages the contractual obligations of the County’s street sweeping contract and submits payments to the Contractor as approved by the Program Manager.
8. *Contractor* – provides street sweeping services at County and school facilities in order to fulfill the obligations of the County’s street sweeping contract.
9. *Supervisor* – employed by the contractor; supervises the street sweeping crew activities on a daily basis and is responsible for ensuring that the sweeping crews follow the appropriate safety guidelines.

### **III. Minimum Requirements**

1. Sweeping operations, both contracted and in-house, shall comply with this SOP and all County safety policies and procedures.
2. The County agencies defined above under Responsible Parties and the sweeping contractor shall sweep and clean leaves, trash, sand, and other debris from parking lots on an as needed basis, to protect storm drain inlets or detention areas from debris.
3. Sweeping may occur after:
  - a. Winter season to remove sand and other pollutants;
  - b. Repair projects (e.g. construction) that involve operations that may leave waste or debris on parking lot or street surfaces;
  - c. Temporary storage of bulk materials such as mulch, dirt, or sand on parking lots or streets; and
  - d. As needed at the I-95 landfill and I-66 transfer stations.



4. Construction project sweeping shall occur as required by the Virginia Stormwater Management Program VAR10 General Permit for Discharges of Stormwater from Construction Activities.
5. If County staff or the sweeping contractor encounters any potentially hazardous material they shall coordinate with the Fairfax County Fire and Rescue Department, Fire and Hazardous Materials Investigative Services (FHMIS) Section, to ensure proper testing, cleanup and disposal. Any spills or leaks of potentially hazardous materials from County or contractor equipment shall be addressed following the steps outlined in the Spill Prevention and Response Procedures or a Fairfax County Fire and Rescue approved site specific cleanup plan.

#### **IV. Sweeping Equipment**

1. Equipment will conform to the current standards established by OSHA and IOSHA for noise and air pollution controls. These standards can be found at the following website: <https://www.osha.gov/law-regs.html>.
2. Each piece of equipment will be equipped with high-intensity flashing lights in accordance with Manual of Uniform Traffic Control Devices (State).
3. Sweepers can be vacuum regenerative, mechanical broom, or a combination of types.
4. Equipment should be capable of sweeping and picking up foreign extraneous material. This includes, but is not limited to: sand, loose aggregates, leaves, debris, trash and other accumulated materials attached or bonded to the paved surface.

#### **V. Equipment Preparation**

1. All sweeping equipment is to be thoroughly cleaned, serviced, and repaired according to manufacturer's guidelines to ensure proper functionality.
2. Inspect sweeping equipment for leaks and contain immediately. Leaking equipment shall be repaired before continued use.
  - a. Upon completion of a site, the driver will conduct a final walk around of the vehicle to ensure there are no leaks as well as drive around the facility to ensure no leaks occurred. If at any time a leak is spotted the driver shall immediately notify their supervisor and apply absorbent to the area. The supervisor shall follow the spill response procedures that are included in the Spill Prevention and Response Procedures or a Fairfax County Fire and Rescue approved site specific cleanup plan.
  - b. All street sweeping equipment (County owned and contracted) will be washed in a wash bay or area where wash water drains to the sanitary sewer. Wash stations where wash water is contained for proper disposal may also be utilized. The currently available wash areas for County equipment are located at the I-95 Landfill Complex and I-66 Transfer Station.

## **VI. Sweeping Operations**

1. Each responsible party shall maintain an inventory of their respective sweeping sites.
2. A sweeping supervisor will be onsite during sweeping/cleaning operations. All workers must wear high visibility clothing and appropriate personal protective equipment, including but not limited to: eye protection, safety vest, safety shoes, hearing protection.
3. The sweeping supervisor shall document the amount of debris, in cubic yards, collected at each site.
4. Parking lots, streets and other paved surfaces shall be swept utilizing a sweeping/cleaning process to remove foreign matter from designated areas.
5. Sweeping/cleaning shall be conducted in a manner to protect storm drain inlets and detention areas from debris. If materials are accidentally deposited into storm drainage structures, the responsible party shall remove the materials immediately.
6. Water shall be used to suppress dust at all times.
7. Collected matter shall be disposed of at an approved dumping site. Any sweeper wastewater must be disposed of in the sanitary sewer.
8. Sweeping/cleaning equipment will be operated in the direction of traffic only and will not encroach more than necessary into the travel lanes. Sweepers are not to exceed 20 mph during sweeping operations.
9. Citizens shall be notified of sweeping activities on any road segment greater than 2500' through the placement of temporary signs along the affected areas 48 hours in advance.
10. The sweeping supervisor shall ensure that, in the event of a spill, the Spill Prevention and Response Procedure or a Fairfax County Fire and Rescue approved site specific spill plan is followed and that the site's manager and Spill Coordinator are notified. In the absence of a manager or Spill Coordinator, the Supervisor must ensure that all required individuals and organizations are notified as described in the Spill Prevention and Response Procedures. These include (but are not limited to) the Fairfax County Fire Marshal's Office. **Failure to report a release of gas, oil, antifreeze, hydraulic fluids, paint, or other hazardous material to the Fairfax County Fire Marshal's Office is a criminal offence (Class 1 misdemeanor).**

## **VII. Training Requirements**

1. All new County employees involved in sweeping operations must participate in mandatory, job-specific training, which may include some or all of the following: agency-specific sweeping plan training, an overview of this Parking Lot and Street Sweeping SOP, administrative processes, hands-on overview of vehicle and equipment operation and maintenance.

## **VIII. Contracts/Contractors**



1. All contracted work is to follow guidelines set forth in this SOP, which is intended to prevent stormwater pollution.
2. The Contract Manager and the Department of Procurement and Material Management ensure that the appropriate contracts are in place and also ensure all necessary documentation is in place to meet contractual obligations, water quality standards, and safety requirements.

## **IX. Record Keeping and Documentation**

1. The Program Manager shall maintain a master list of swept locations (by address).
2. The Program Manager shall keep records of the amount of debris, in cubic yards, collected by street sweeping by County watershed and HUC, annually. Store these records in <J:\STW\Divisions & Branches\MSMD\Branches & Sections\Contracting\Sweeping>.
3. Each agency shall maintain copies of training records and provide to the Program Manager upon request.
4. Each agency, including the Department of Vehicle Services, shall maintain copies of manufacturer's recommendations for equipment calibration for all equipment it maintains.

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

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Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P6

Roadways SOP's - Roadways and Parking  
Lots Construction

VSMP Permit Number VA0088587  
9-30-2022



Department of Public Works and Environmental Services  
POLICIES AND PROCEDURES

Memorandum No.: MSMD18-03

SUBJECT: Roadway and Parking Lot Construction and Maintenance

Effective: 3/27/2018

Revised: 6/18/2019

Approval:

I. Purpose

Asphalt, concrete, and pervious surfaces are provided and maintained by the County for vehicular and pedestrian access over County right-of-ways (ROW) and within County facilities. If not handled properly, pollutants associated with the construction and maintenance of these have the potential to negatively impact water quality. This Roadway and Parking Lot Construction and Maintenance standard operating procedure (SOP) has been designed to provide County personnel and contractors a set of standard procedures that must be followed to prevent negative impacts to surface waters. This SOP was developed to focus on specific activities related to roadway and parking lot construction and maintenance that are undertaken by County personnel and/or contractors on County property. This SOP shall be considered the primary pollution prevention guidance document for projects that are not being conducted under a formal stormwater pollution prevention plan (SWPPP) or similar pollution prevention plan required by a specific permit or regulation.

This SOP will satisfy the following MS4 permit section:

*“IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*

- 1) No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
- 2) No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
- 3) Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
- 4) The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces.”*

## II. Responsible Parties

1. *Maintenance and Stormwater Management Division (MSMD)* – provides repairs and maintenance at 10635 West Drive, Central Maintenance Facility (CMF), and Dulles Materials Facility (DMF). MSMD also leads snow removal activities for most public facilities not managed by Fairfax County Public Schools, Solid Waste Management, or Fairfax County Park Authority.
2. *Fairfax County Public Schools (FCPS)* – provides surface construction, repair and maintenance at all County school facilities. A list of these locations is maintained by FCPS.
3. *Fairfax County Park Authority (FCPA)* - provides surface construction, repair and maintenance of parking lots, access roadways, and trails at County park facilities. A list of park facilities is maintained by FCPA.
4. *Facilities Management Division (FMD)* – provides pavement marking, asphalt and concrete pavement repair and asphalt pavement construction overlay at various County facilities with the assistance of contractors.
5. *Solid Waste Management (SWM)* - provides surface construction and repair at the County's Solid Waste facilities.
6. *Utilities Design and Construction Division (UDCD)* – provides construction of roadway, sidewalk, trail, intersection improvement and traffic calming projects throughout the County.
7. *Wastewater Management (WWM)* – provides surface construction, repair, and maintenance at County facilities and within VDOT ROWs with in-house support as well as assistance of contractors. A list of these locations is maintained by WWM at Noman Cole Plant and Freds Oak Facility, and includes the Noman Cole Treatment Plant Facility, Freds Oak Facility, Sanitary Sewer Pumping Stations/access roads and sewer repairs within VDOT right-of-ways.
8. Other departments/agencies that perform construction and maintenance activities at facilities they operate include *Department of Vehicle Services (DVS)*.
9. Parking lot and roadway construction, large repair projects, and surface painting operations at some facilities are outsourced to contractors, with the expectation that contracted services will be consistent with services provided by the County.

## III. General Procedures

1. Ensure spill response material/equipment is readily available when work activity requires the use of paints, chemicals, or other material that could harm human health or the environment.
2. Provide for protection of storm drain inlets when working in close proximity and there is a potential for a discharge to a storm drain as the result of a spill or a precipitation event.
3. Ensure that material safety data sheets (MSDS) are available for all materials used during surface repair and maintenance activities. MSDS should be readily available and accessible to all County and contractor personnel handling chemicals or other potentially harmful materials.
4. To the extent possible, construction and maintenance activities should only be scheduled and conducted during dry weather. All possible precautions should be used to avoid conducting potential pollution generating construction and maintenance activities immediately before or during times when precipitation is likely.
5. During periods of construction and/or maintenance, the work area should be routinely inspected for signs of spills, leaks, trash accumulation, illicit discharges from the site, build up of sediment, or other conditions that may result in the discharge of pollutants from the site to the storm drainage system.

6. To the extent possible, broom sweep or vacuum all surfaces periodically to keep the work area clean and free from pollutants. Hosing down surfaces should be avoided unless the area is completely contained so that all drainage is directed to the sanitary sewer.

#### IV. Asphalt Surface Repair and Maintenance

1. Store mixed asphalt material under cover and protected from precipitation and extreme temperatures.
2. Reduce the amount of asphalt material stored onsite. When possible, purchase only the amount of material necessary to complete a project.
3. If bulk material storage is necessary, locate storage area outside of the drainage conveyances and away from storm drain inlets.
4. Minimize the amount of water used when conducting asphalt cutting, grinding, or milling. Water should only be used in amounts necessary to control dust or provide lubrication, and should never be used in amounts that would result in a flow that could discharge to the storm drainage system.
5. All sediment and debris resulting from cutting, grinding, milling, or other repair and maintenance should be contained, swept up, and disposed of properly. Refer to the *Street Sweeping SOP* for additional guidance as needed.
6. Promote use of only asphalt-based products for sealcoat or similar treatment applications where possible. The use of coal tar-based products should be discouraged at any County facility to the greatest extent possible.
7. Apply sealants or other liquid surface treatments with care, avoiding misapplication to a storm drain or other non-asphalt surface. When conditions require application adjacent to a storm drain inlet, consider the use of an impervious inlet cover to prevent unintended spray into the storm drain.

#### V. Surface Painting/Striping

1. When removing old paint, contain the removed paint to the extent possible and dispose as appropriate. If there is a potential to encounter lead-based paint, additional precautions not outlined in this SOP may be required.
2. When using high pressure water to remove old paint, protect nearby inlets to prevent the discharge of waste paint, sediment, or other pollutants into the storm drainage system. Use perimeter control around the work area to collect removed paint and dispose as appropriate.
3. When surface grinding or sand blasting to remove paint, sweep up paint debris immediately. If water is used for grinding, minimize the amount of water to prevent a discharge to the storm drainage system.
4. To the extent practicable, use thermoplastic markings instead of paint for all surface striping.
5. All paint should be stored inside and protected from precipitation.
6. To the extent practicable, handle paint in a contained area, under cover from precipitation. If secondary containment is not available, use temporary structural best management practices to protect storm drain inlets and prevent the discharge of paints in the event of a spill.
7. Apply paint at an appropriate rate to prevent excess paint from running off the site.
8. In the event of a spill, containment material should be deployed to contain the spill and prevent paint from entering the storm drain.
9. Dispose of all waste material in an appropriate manner. Excess latex and water based paint that is not able to be used elsewhere can be allowed to dry, under cover from precipitation, and disposed of as solid waste. Refer to product information for specific requirements for disposal.

Leftover oil based paints and solvents must be disposed of as hazardous waste according to federal and state environmental regulations; these materials may not be disposed of at the County's household hazardous waste facilities. For assistance in arranging hazardous waste disposal, call the County's Solid Waste Management Program.

10. Paint equipment should be washed after use in a designated wash area that is plumbed to a sanitary sewer, or approved containment structure.

## VI. Concrete Surface Repair and Maintenance

1. Store dry concrete material inside, under cover from precipitation.
2. Minimize the amount of concrete material stored onsite. If possible, purchase only the amount of concrete material needed for a particular job.
3. Identify storm drain inlets located in the vicinity of the work site. Storm drain inlets should be protected with a barrier if the work is in close proximity to the inlets and there is a reasonable chance for material to discharge to the inlet as the result of a spill or precipitation event.
4. To control dust, "wet" cutting methods should be used when practicable. Minimize the amount of water used when conducting cutting to prevent a discharge to the storm drain system. Saw cut slurry should be contained and properly disposed. Using a vacuum to contain slurry in the saw cutting process is an effective way to ensure that pollutants are not allowed to enter storm drains or other stormwater infrastructure.
5. Remove demolished concrete or related debris and dispose in a landfill facility as appropriate. Dry cleanup methods (broom and shovel) should be used to manage concrete debris to the extent practicable.
6. A concrete washout should be clearly established and identified at any location where concrete is to be mixed or poured. The concrete washout should be constructed with an impervious material and in a manner that would prevent washout material from discharging to the storm system.
7. Excess material that cannot be used at another location or project can be discharged into the designated concrete washout facility, if adequate capacity exists, where it should be allowed to dry and then be disposed as construction waste.

## VII. Low Impact Development (LID) Considerations

1. Prior to conducting any construction or maintenance work, locate and identify any LID within the project area (examples may include pervious or porous pavement, rain gardens, and vegetated islands). Contact MSMD for assistance in identifying these areas at County facilities.
2. Clearly delineate porous pavement, pervious pavers, and similar surfaces that are not easily distinguishable from traditional surfaces, to increase awareness of these surfaces.
3. Surface vacuuming should be performed on a routine basis and in the event of a spill of any material that may clog pore spaces. While sweeping may be effective, it can lead to clogging of pores with sediment and other granular material.
4. Do not locate staging areas, equipment, or material storage areas on top of porous pavement.
5. Take future maintenance requirements into consideration when constructing porous pavements. Porous surfaces should not be intermingled with traditional surfaces where separate maintenance practices are not physically possible.

## VIII. Contractor Coordination

1. Provisions of this SOP should be incorporated into contracting agreements, primarily through the inclusion in contract technical specifications. Project specific requirements for the proper

- handling of roadway and parking lot construction and maintenance materials should be included in project work orders, when not clearly included in contract technical specifications.
2. Requirements of this SOP and any additional project specific requirements shall be discussed with contractors in project contract discussions, pre-construction meetings, or through other similar avenues to ensure that contractors are instructed on the details of this SOP.
  3. To the extent possible, contractors should consider the use of asphaltic based sealants instead of coal-tar based sealants on County projects.

IX. Training Requirements

1. All employees engaged in roadway and parking lot construction and maintenance shall be trained in the proper use and handling of asphalt and concrete materials, paints, and other related materials and equipment. The training should include the technical aspects of the construction and maintenance activity as well as the pollution prevention measures included in this SOP.

X. VPDES Permitted Facilities

Stormwater discharges associated with industrial activity that are authorized by a Virginia Pollutant Discharge Elimination System (VPDES) Industrial Stormwater Permit are authorized to discharge through the MS4. Those County facilities that hold a VPDES Industrial Stormwater Permit shall follow the conditions established under that permit, including development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). When possible, VPDES Industrial Stormwater Permit holders and Stormwater Planning Division shall review appropriate SOPs, Best Management Practices (BMPs) and guidelines for inclusion in the facility's SWPPP with final approval by the site's director.

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

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Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P7

Roadways SOP's - Material Storage

VSMP Permit Number VA0088587  
9-30-2022



Department of Public Works and Environmental Services  
POLICIES AND PROCEDURES

Memorandum No.: MSMD18-07

**SUBJECT: Outdoor Material Storage Procedure**

Effective: 3/27/2018

Revised: 6/18/2019

Approval: 

## I. Purpose

This County-wide standard operating procedure (SOP) has been developed to establish consistent stormwater pollution prevention practices for the proper storage of raw materials that are stored outdoors, such as rock salt, aggregates, soil, asphalt material, and organic wastes, to prevent the pollution of stormwater runoff which can impact nearby waterbodies, contaminate soil, or leach into groundwater.

This SOP will satisfy the following MS4 permit section:

*“IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*

- 1) *No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
- 2) *No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
- 3) *Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
- 4) *The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces.”*

## II. Minimum Requirements:

### *Storage:*

1. Store materials indoors or under cover.
2. Salt and other deicers must be stored indoors or under a roof or cover and on an impervious surface. Deicer storage should be bermed, walled, or surrounded by secondary containment whenever possible.
3. Outside storage areas must be covered with a roof or waterproof covering.
  - a. After each use, ensure that the material is fully contained within roof or waterproof covering (e.g., sweep material back into bulk storage bay).

- b. Material storage areas (e.g., stock piles) must have a tarp or other cover on the top and all exposed sides when not in use.
  - c. If stockpiles are too large to be covered or contained, erosion and sediment control measures must be placed at the perimeter of the site and/or at any catch basins to prevent erosion of stockpiled materials.
4. If liquid materials are stored outdoors, the materials must be stored in clean, sturdy leak tight containers that are designed to be stored outside (e.g., drums).
- a. Store liquid materials in secondary containment where possible, in secure areas and away from traffic.
  - b. Liquid waste materials must be stored in secondary containment.
  - c. Store containers in a location where they will not be accidentally damaged by equipment or vehicles.

*Spill Response:*

1. In the event of a spill refer to the Spill Prevention & Response Procedure.
  - a. Large spills of hazardous materials (including oil and gas) should be reported by calling 911 immediately!
2. Have spill cleanup materials readily available in a known and convenient location.

*Signage Required:*

1. Install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F of Fairfax County's Municipal Separate Storm Sewer System Permit (MS4), and on County properties with greater than 2-acres of impervious surface. Storm drain markings should indicate that the marked inlet discharges to the storm network or surface water.

*Employee Training:*

1. Train employees on proper storage practices for each type of material stored at the facility.
2. Train employees and contractors on proper spill containment and cleanup procedures.
3. Conduct "refresher" courses on biennial basis as required by the County's MS4 permit.

**III. Routine Maintenance:**

1. Keep storage area clean and dry.
  - a. Inspect storage areas for cleanliness, sweep, and remove debris or trash.
2. Ensure stockpiles have proper coverage and material/debris is not eroding.
3. Repair and replace perimeter controls, containment structures, and covers as needed to keep them properly functioning.
4. Clean up leaks or drips from the ground surface using dry cleanup methods such as the use of absorbents.
5. Maintain temporary-type Best Management Practices (BMPs) such as silt fences, straw "wattles," check dams, etc. Remove built-up debris or sediment as necessary.
  - a. Replace defunct or damaged materials.

**IV. VPDES Permitted Facilities**

Stormwater discharges associated with industrial activity that are authorized by a Virginia Pollutant Discharge Elimination System (VPDES) Industrial Stormwater Permit are authorized to discharge through the MS4. Those County facilities that hold a VPDES Industrial Stormwater Permit shall follow the conditions established under that permit, including development and implementation of a

Stormwater Pollution Prevention Plan (SWPPP). When possible, VPDES Industrial Stormwater Permit holders and the Stormwater Planning Division shall review appropriate SOPs, BMPs, and guidelines for inclusion in the facility's SWPPP with final approval by the site's director.

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

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Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P8

Roadways SOP's - Vehicle Maintenance

VSMP Permit Number VA0088587  
9-30-2022





Department of Public Works and Environmental Services  
POLICIES AND PROCEDURES

Memorandum No.:

MSMD-19-12

SUBJECT: Vehicle and Equipment Repair and Maintenance Procedure

Effective: 3/27/2018

Revised: 6/18/2019

Approval:

## I. Purpose

These standard operating procedures (SOP) have been developed to establish consistent stormwater pollution prevention practices for use during vehicle/equipment repair and maintenance in order to reduce pollutants such as solvents, antifreeze, brake fluid, battery acid, motor oil, fuel, or grease from entering the storm sewer system and negatively impacting water quality.

This SOP will satisfy the following MS4 permit section:

*“IB2c: Roadways. Streets, roads, and parking lots maintained by the permittee shall continue to be operated and maintained in a manner to minimize discharge of pollutants, including those pollutants related to deicing or sanding activities.*

- 1) *No later than 12-months after the effective date of this state permit, the permittee shall develop and maintain an accurate list of permittee maintained roads, streets and parking lots that include the street name, the miles of roadway not treated by BMPs, and miles of roadway treated with BMPs*
- 2) *No later than 36-months after the effective date of this state permit, the permittee shall develop and implement written protocols for permittee maintained road, street, and parking lot maintenance, equipment maintenance and material storage designed to minimize pollutant discharge.*
- 3) *Materials utilized for deicing and sanding activities shall remain covered from precipitation until application.*
- 4) *The permittee shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorous to parking lots, roadways, and sidewalks or other paved surfaces.”*

## II. Minimum Requirements

1. Designate a parking area for vehicle/equipment awaiting maintenance or repair.
  - a. Attempt to perform maintenance/repair or store vehicle/equipment awaiting maintenance or repair indoors or on an impervious surface.
  - b. If activities must be performed outside:
    - i. Locate on an impervious surface (i.e., pavement) and away from stormwater conveyances (i.e., swales, drain inlets, etc.) and surface waters to ensure leaks or spills will not be discharged.
    - ii. Have absorbent pads and drip pans accessible to capture leaks and spills during maintenance activities.



- iii. Immediately drain the source of the leak, using a drip pan, bucket, drop cloth, or absorbent materials.
- 2. Empty contents of container into proper waste or recycling container.
  - a. Do not leave collected materials in container to be spilled or kicked over.
- 3. Inspect vehicle/equipment for leaks.
  - a. Use drip pans or absorbent material to capture leaking fluids.
- 4. Clean up any spilled fluids immediately.
  - a. Use dry clean-up methods only, if possible. Never use water to clean up a spill.
- 5. Keep waste oil, antifreeze, and other fluids properly covered and contained in tight fitting labelled containers.
- 6. All hazardous wastes must be labeled and stored according to hazardous waste regulations.
- 7. Never discharge hazardous waste to the storm or sanitary sewer systems.
- 8. Active Fleet/Equipment
  - a. Use drip pans or absorbent material to capture leaking fluids.
  - b. Clean up any spilled fluids immediately.
  - c. Individual vehicles/equipment must be consistently stored or parked in the same area to allow for consistent controls.
  - d. Properly dispose of all waste oil, antifreeze, and other fluids.
  - e. Keep different types of fluid separate and recycle whenever possible.
  - f. Equipment must never be stored within the drip line of trees or adjacent to a storm drain, stormwater conveyance, or natural waterway.
- 9. Surplus Fleet/Equipment
  - a. Inventory all surplus vehicle/equipment.
  - b. Drain all fluids from surplus vehicle/equipment to prevent drips and leaks, prior to storage.
  - c. Minimize contact with rain by keeping metals/equipment stored inside to the maximum extent possible.
  - d. Do not store surplus equipment for extended periods of time (i.e., more than 180 days) or allow for an excessive amount of equipment to build up prior to removal/disposal.
    - i. If an extended period of time is expected or exceeded, disassemble useable motors and parts and place in appropriate indoor storage locations. Remaining machinery must be disposed of as scrap.

*Spill Response:*

- 1. In the event of a spill refer to the Spill Prevention & Response Procedure.
  - a. Large spills of hazardous materials (including oil and gas) should be reported by calling 911 immediately!
- 2. Have spill cleanup materials readily available in a known and convenient location.

*Signage Required:*

- 1. Install and maintain markings on all stormwater inlets located on high priority municipal facilities, as defined at Part I.F of Fairfax County's Municipal Separate Storm Sewer System Permit (MS4), and on County properties with greater than 2-acres of impervious surface. Storm drain markings should indicate that the marked inlet discharges to the storm network or surface water.
- 2. Mark the area clearly as a storage area.
- 3. Designate a special area to drain oil, coolant, or other fluids from surplus equipment.
- 4. Littering is prohibited.

5. Drain markers must also serve as a reminder to employees to wash vehicle/equipment only in designated areas.

*Employee Training:*

1. Train employees and contractors on proper cleaning of pervious areas and equipment operation.
2. Train employees on proper preventative practices for vehicle/equipment storage.
3. Train employees on the proper disposal of fluids and waste material from both surplus and operated vehicle/equipment.
4. Train employees and contractors on proper spill containment and cleanup procedures.
5. Conduct “refresher” courses on biennial basis as required by the County’s MS4 permit.

### III. Routine Maintenance

1. Sweep the maintenance area routinely.
  - a. Wipe up spills with rags and other absorbent materials.
  - b. Use dry clean-up methods only.
  - c. Do not hose down the area to a storm drain.
2. Clean up leaks or drips from the ground surface using dry cleanup methods such as the use of absorbents.
3. Repair damaged hoses and leaky gaskets immediately.
4. Collect leaking or dripping fluids in drip pans.
  - a. Empty drip pans regularly.
  - b. Keep different types of fluid separate and recycle whenever possible.
5. Keep designated maintenance area and equipment clean.
  - a. Do not allow oil and grease to build up over time.
6. Keep an accurate maintenance log and inventory to evaluate materials use.
7. Only wash parts in a designated area (e.g., parts washer) and verify that no wash water is discharged during the process.
  - a. Clean parts without using solvents whenever possible.

### IV. Good Housekeeping Checklist

1. Inspect parking facilities and stormwater conveyance systems monthly.
2. Inspect incoming vehicle/equipment for leaks upon arrival.
3. Inspect stored vehicle/equipment for damaged hoses and leaky gaskets in accordance with preventive maintenance program and repair or replace immediately.
4. Inspect the ground surface under and around active fleet weekly for signs of leaks and drips.
5. Repair or replace immediately.
6. Inspect the ground surface under and around surplus vehicles/equipment monthly for signs of leaks and drips.
7. Inspect spill equipment weekly.

### V. VPDES Permitted Sites

Those facilities covered under a VADEQ VPDES permit and which conduct regular vehicle maintenance are subject to additional requirements for inspections, documentation, etc. Individuals operating out of facilities meeting this description should consult the Storm Water Pollution Prevention Plan (SWPPP) for their facility

and follow all included requirements. As of this signing, the VPDES permitted vehicle maintenance facilities are:

- Newington Maintenance Facility (Permit#: VAR051771)
- West Ox Maintenance Facility (Permit #: VAR051773)
- Jermantown Maintenance Facility (Permit #: VAR051770), and
- Alban Maintenance Facility (Permit #: VAR051772).

Significant updates or changes to this SOP will be distributed to representatives from all applicable County agencies for approval. For any questions, please contact

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Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P9

Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections

VSMP Permit Number VA0088587  
9-30-2022



Department of Public Works and Environmental Services  
**POLICIES AND PROCEDURES**

Memorandum No.: SWPD14-01

**SUBJECT: Standard Operating Procedures for Industrial and High-Risk Runoff (IHRR) Program MS4 Point-of-Connection and Facility Inspections**

Effective: 2/2/2015

Revised: 5/24/2022

Approval:

A handwritten signature in black ink, appearing to be "J. B.", written over a horizontal line.

**I. Purpose**

To establish the guidelines by which Stormwater Planning Division (SWPD) Stormwater Pollution Inspections Section (SPI) inspects industrial and high-risk runoff (IHRR) facility outfalls at the point(s) of connection to the Fairfax County municipal separate storm sewer system (MS4).

**II. Standard Operating Procedures for Industrial and High-Risk Runoff (IHRR) Program MS4 Point-of-Connection and Facility Inspections**

**A. Introduction**

Section I.B.2.g of Fairfax County's MS4 permit requires the County to "implement a program to identify and control pollutants in storm water discharges to the MS4 from IHRR facilities (municipal landfills; other treatment, storage, or disposal facilities; facilities that are subject to EPCRA Title III, Section 313) and any other industrial or commercial discharges the permittee determines may contribute a significant pollutant loading to the MS4."

Chapter 124 of the Code of Fairfax County, Virginia ("Stormwater Management Ordinance"), Section 124-9-4 requires the Director of the Department of Public Works and Environmental Services to develop a program for routine inspection of industrial and commercial properties that present a high risk of discharging non-stormwater substances that may result in a significant pollutant load entering the County MS4.

These inspection guidelines are intended for the SPI code specialists and ecologists tasked with conducting IHRR inspections.

**1. Facilities**

The guidelines in this procedural memorandum cover inspections at facilities identified by Fairfax County as IHRR facilities. This means any inspection required under Section I.B.2.g of the County's MS4 permit, including (1) outfalls of facilities with Virginia Pollutant Discharge Elimination System (VPDES) industrial stormwater permits at the point of connection to the County MS4 (I.B.2.g.2), (2) any non-VPDES permitted industrial facility from which the permittee has evidence that a significant pollutant load is entering the County MS4 system (I.B.2.g.4), and (3) any industrial and/or commercial stormwater dischargers not regulated under the Virginia State Water Control Law that it determines may be contributing a significant pollutant loading to the County MS4 (I.B.2.g.6).

To identify such facilities, the County developed the following definitions as guidance:

- **High-Risk Facility** – any commercial or industrial facility that has caused a discharge that has contributed a significant pollutant loading to the MS4 on a recurring basis; or any discharger identified in accordance with Section I.B.2.g.6 of the MS4 permit.
- **Industrial Facility** (as identified within the permit) – a municipal landfill; other treatment, storage, or disposal facility for municipal waste; a hazardous waste treatment, storage, disposal and recovery facility; a facility that is subject to EPCRA Title III, Section 313; a VPDES industrial stormwater permitted facility; and any other facility with a "storm water



discharge associated with industrial activity,” as the term is defined in 40 CFR 122.26(b)(14), to the MS4.

- **Recurring Basis** – a discharge that has occurred at least three times in a five-year period.
- **Significant Pollutant Load** – a discharge that contributes pollutants sufficient to cause or exacerbate the deterioration of receiving water quality or aquatic life. [Examples are provided in II.A.2 below.]

## 2. Evidence of Significant Pollutant Loads

The County will apply the following definitions as guidance:

- **Evidence** – something that tends to prove or disprove the existence of an alleged fact.
  - Examples of evidence of stormwater pollution may include but are not limited to: the presence of pollutants in flow samples that exceed water quality screening thresholds, color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, grease, deposits and stains, abnormal vegetative growth, and outfall damage such as cracking or corrosion.
- **Violation** – any unauthorized discharge into the County’s MS4. These violations may include, but are not limited to:
  - discharges referenced in the Stormwater Management Ordinance
  - discharges not authorized by the County’s MS4 Permit
  - discharges in exceedance of the State of Virginia Water Quality Standards
  - discharges in exceedance of VPDES effluent limitations
  - Examples of unauthorized discharges include, but are not limited to:
    - Chlorinated water (non-potable)
    - Improper disposal of grass clipping, leaf litter and pet wastes
    - Non-permitted commercial vehicle and equipment washing
    - Non-permitted cooling tower discharges
    - Process water (such as stone cutting wastes, plating bath wastewater, etc.)
    - Restaurant wastes such as cooking oil/grease or floor washing water
    - Vehicle motor oil, including water from service bay cleanings
    - Sanitary waste

In many instances, visual cues and/or odors are enough evidence of illicit discharges, so Stormwater inspectors may begin tracking evidence to a pollutant source or request that a discharge be stopped without sampling flow. If flow is present at the point of connection to the County MS4 but the source is not evident based on visual cues or odors, inspectors may collect and screen samples for the indicators of potential non-stormwater discharges most appropriate for the type of facility being inspected. The suite of indicators selected by Fairfax County are similar to those recognized nationally by many other stormwater programs and entities such as EPA and the Center for Watershed Protection. Additional details about the screening procedures are described in the Screening Procedures for Illicit Discharges, Procedural Memorandum SWPD14-04.

Generally, inspectors will try to track evidence to a source or require responsible parties to identify the source of pollutants. Under certain scenarios, inspectors may be restricted from tracking (e.g., at restricted private property or a VPDES-permitted facility under the jurisdiction of Department of Environmental Quality (DEQ)).

The County’s MS4 permit states that “the permittee shall coordinate with [DEQ] to report any non-VPDES permitted industrial facility from which the permittee has evidence that a significant

pollutant load is entering the MS4 system.” Evidence of significant pollutant loads are reported to DEQ in accordance with sections II.D.10 and II.G of this memorandum.

### 3. Inspection Prioritization

Historically, Stormwater inspectors divided and prioritized IHRR inspection efforts geographically according to County magisterial districts. The inspection program will continue to consider magisterial districts for the purpose of balancing inspector workloads. Moving forward, inspection prioritization will be based on the types of industrial activity, as determined by Standard Industrial Classification (SIC) codes, that are considered at higher risk than others of discharging pollutants and industrial activities that are identified in Total Maximum Daily Load (TMDL) action planning.

The County has implemented a modified prioritization scheme for the second inspection cycle (commenced in FY 2020) that considers IHRR facilities in this order:

- Priority 0 – A grouping of facilities that will not be inspected in association with the IHRR inspection program, including:
  - PCB - DEQ 2016 (PCBO-16) – A facility with a SIC code recommended for further study in the research paper, "The Relationship between Polychlorinated Biphenyls (PCBs), VPDES Wastewater/Stormwater Facilities, Stormwater Industrial General Permitted Facilities (ISWGPs), and the Standard Industrial Classification System (SIC)" (VDEQ, 2016).
  - Zoning – Facility is located in an area of the County that is not zoned for industrial or commercial purposes.
  - Not IHRR – The facility has been visited and/or inspected and determined not to meet the criteria of IHRR based on the inspector’s best professional judgement (e.g., only indoor activities, large commercial buildings with the business on above ground floors, etc.)
  - IHRR in county out of MS4 area – The facility meets IHRR criteria but is not within the County MS4 service area (i.e., no stormwater infrastructure).
  - Duplicate record – The facility is already on the IHRR list
  - Not found at this address – The facility on the IHRR list has moved, closed, or disbanded.
  - Other MS4 jurisdiction – The facility meets IHRR criteria but is with another jurisdiction within the County (e.g., Town of Herndon, Town of Vienna, City of Falls Church, Town of Clifton, City of Alexandria)
- Priority 1–Targeted industrial activities including the following:
  - Major Automotive - A grouping of industries at higher risk of discharging pollutants as identified by Fairfax County based on MS4 permit language and best professional judgement.
  - High Risk (HR) - A grouping of industries at higher risk of discharging pollutants as identified by Fairfax County based on best professional judgement.
  - PCB - DEQ 2009 (PCBO-09) – A facility with primary or secondary SIC codes that are subject to the monitoring guidance, "TMDL Guidance Memo No. 09-2001. Guidance for monitoring of point sources for TMDL development using low-level PCB method 1668" (DEQ, 2009) because, by DEQ's reasoning, specific types of

industrial or commercial operations are more likely than others to have a discharge that includes PCBs.

- Priority 2—After assigning priority 1 facilities, all remaining facilities will be assigned priority 2 including the following industrial and/or commercial categories:
  - EPCRA Sec 313 (313-C) – A facility with industrial classification codes covered by EPCRA Section 313 for reporting under Toxics Release Inventory program.
  - EPCRA Sec 313 (313-R) – A facility with industrial classification codes covered by EPCRA Section 313 that reported a release within the past three years.
  - Industrial Stormwater GP (IS) – A facility with SIC codes for industrial activities covered by the VPDES industrial stormwater (IS) general permit.
  - Study (ST) - A grouping of industries identified by Fairfax County for further study based best professional judgement (inspection results).
  - Windshield (WS) - Facilities observed to conduct IHRR operations that were not in the Data Axle database SIC Code search.
  - VPDES - Facilities registered with VADEQ VDPES permit.

The prioritization ranking will be reflected on the County's industrial discharger list (in the Priority field).

This prioritization is intended to be applied broadly, but not force inspectors to schedule individual IHRR inspections in a specific order. Inspectors will give priority to inspecting Priority 1 facilities but may couple those inspections with Priority 2 inspections, when reasonable for efficiency. Within the broader prioritization framework, inspectors should have flexibility. The program may adjust inspection priority over time based on historical discharges, local water quality impairments, industrial category, or other methods such as results of previous inspections, DMR review, known spills, complaints, or findings from other County programs such as dry or wet weather screening.

At a minimum, the County will inspect VPDES industrial stormwater permitted outfalls connected to its MS4 once every five years consistent with the MS4 permit requirement.

#### **4. Organization of this Memorandum**

Major sections of this memorandum describe the three main phases of an inspection, namely pre-inspection, inspection (MS4 point of connection and facility) and post-inspection. A flowchart of the inspection process is provided Figure 1. This memorandum also describes referrals to DEQ and basic safety precautions.

##### **B. Personal Safety Prerequisites**

1. Confined space awareness training, including refreshers, is required at the frequency specified by the division director to participate in IHRR point-of-connection and facility inspections. During an actual inspection, inspectors should not break the plane of a confined space with any part of their body at any time as per the SWPD Confined Space Policy (contained within Appendix A).
2. Personal protective equipment (PPE) must be worn as appropriate during inspections, which must include steel toed boots and safety vest and may include hard hats, safety glasses, gloves, and waterproof clothing (waders), breathing face masks, as needed. All vehicles must be equipped with a first aid kit.

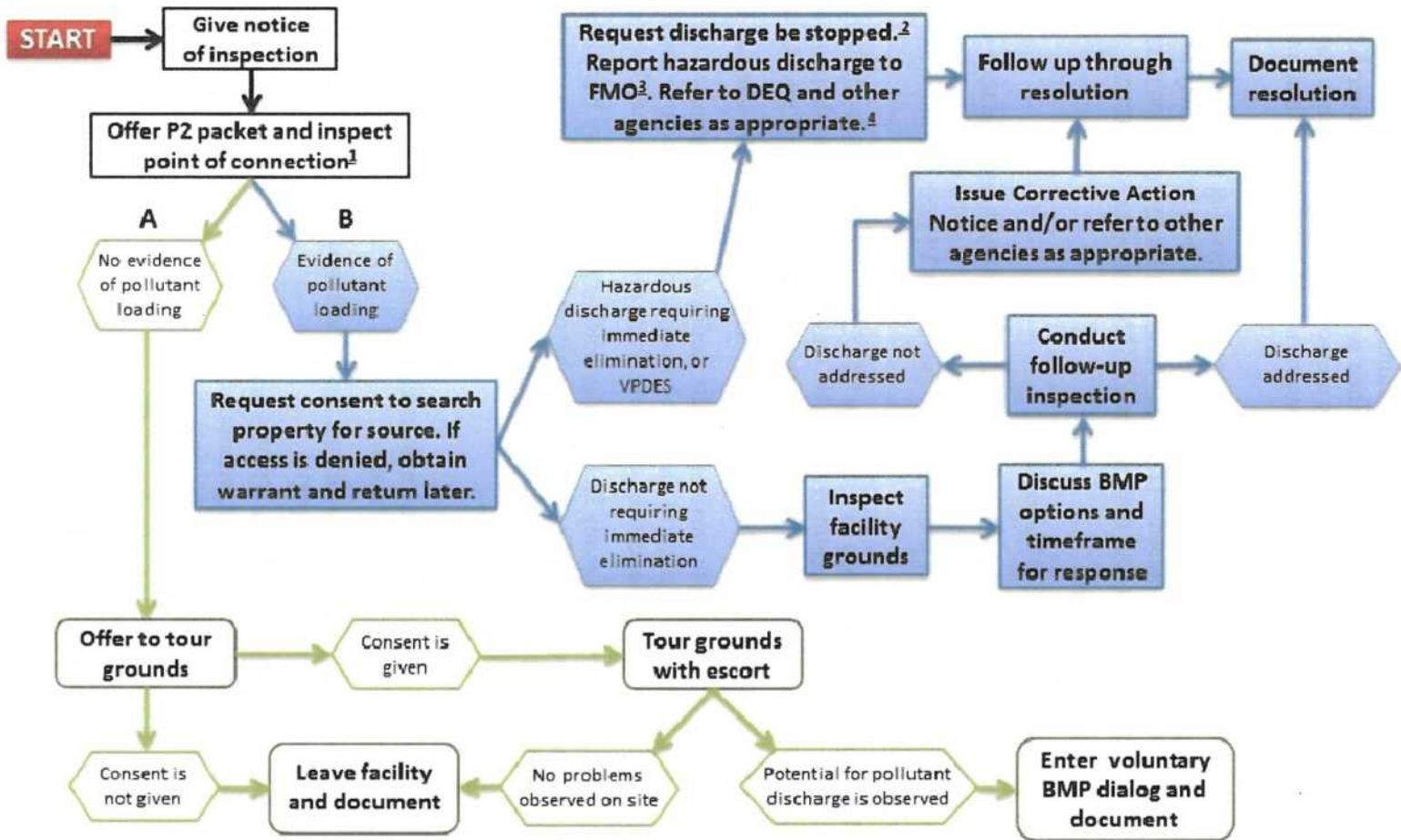
3. Inspectors should copy their supervisor and branch chief on email correspondence when they send lists of facilities to division administrative staff for letter preparation. On the day of inspection, inspectors should notify their supervisor or acting supervisor and administrative staff by email when they are going into the field, when they return. Inspectors should have informed their supervisor of how to reach them in case of emergency generally
4. If there is any indication before dispatch or upon arriving at the site that hazardous material may be present, contact the Fire Marshal's Office (FMO) immediately to determine if hazardous material is present. Do not proceed with the investigation until the FMO has verified that any hazardous material the FMO screens for is not present.

### **C. Pre-inspection Activities**

1. Scheduling a Facility for Inspection
  - a. Begin by selecting facilities from the IHRR facility database in accordance with the inspection prioritization. The selected facilities may be added to a list for mail merge. Note: Separate letter templates were created for VPDES-permitted and non-permitted facilities.
  - b. Check the registration statement for VPDES permitted facilities to determine the location(s) of the permitted outfall(s). Only the permitted outfall(s) connected to the County MS4 will be inspected; permitted direct discharges will not be inspected.
  - c. Send the "Stormwater Inspection Letter" (Appendix B) to the selected IHRR facilities.
  - d. Optional: Attempt to email or call the facility owners or designated facility representatives to confirm the point-of-connection inspection one week prior to the inspection date. Request an escort if private property access will be needed.
  - e. If the facility is a County facility, also notify the MS4 County Facilities Program Coordinator because County facilities have additional requirements under the MS4 permit. An MS4 County Facilities team member may request to be onsite during the inspection.
2. Preparing for an Inspection
  - a. Optional: Prepare a facility map using the template created by the GIS analyst (Appendix C) for printed maps.
  - b. Review and evaluate all available facility information including any previous stormwater inspection reports.
  - c. Where applicable, review VPDES permits, including parameter-specific effluent limitations, and discharge monitoring reports (DMRs) from the past two years, along with any violations or complaints.



# IHRR Inspection Program



**Notes:**

- <sup>1</sup> The point of connection is where the facility's discharge enters Fairfax County's MS4.
- <sup>2</sup> SWPD may initiate enforcement of non-VPDES facilities. This could include issuance of a Corrective Action Notice. It could also include coordination with the County Attorney's Office.
- <sup>3</sup> In all emergency situations involving discharge of hazardous materials, call 911 immediately.
- <sup>4</sup> Any facility with a VPDES permit shall be reported to DEQ when evidence of significant pollutant loading to state waters is found. Notify the MS4 County Facilities Coordinator of significant pollutant loading involving any county facility.

Figure 1: IHRR Program Inspection Process

- d. Gather necessary inspection equipment and ensure that it is in the vehicle and in working order. Equipment includes:
  - i. Personal protective equipment (e.g., hard hat, safety vest, steel-toe boots)
  - ii. Inspector screening kits (with calibrated meters)
  - iii. Sample tote bag including collection tools and bottles
  - iv. Manhole hook
  - v. Camera with charged batteries (optional)
  - vi. Phone
  - vii. Mobile computing equipment
  - viii. First aid kit
  - ix. Hazardous waste containers

#### **D. MS4 Point-of-Connection Inspection**

An overview flowchart of the entire inspection process is provided in Figure 1. It is required that IHRR inspections begin at the point of connection to Fairfax County's MS4.

1. Ensure that all steps in Section II.C are complete prior to starting an inspection.
2. Inspections may be conducted under dry or wet weather conditions. On the day of the inspection, check National Weather Service (NWS) or other weather website to determine if conditions are dry weather or wet weather. Dry weather conditions are met whenever there is < 0.1 inches of rain within 48 hours.
3. Upon arrival, inform the facility contact that you are present onsite. (Refer to Confidential Memorandum 121776 for procedures for conducting investigations on private property.)
4. Provide either a complete pollution prevention (P2) packet, or industry-appropriate insert(s) from the packet. If the facility was identified by a SIC code associated with PCBs, provide educational material.
5. Start the site inspection in the IHRR mobile application.
6. Locate the point(s) of connection identified in the IHRR mobile application.
  - a. If the point of connection is not accessible, go to the next stormwater manhole located upstream in the storm drainage system.
  - b. Staff may remove storm drain manhole covers and use powered devices to collect water samples, if present.
  - c. Complete a Structure Inspection in the IHRR mobile application for each structure inspected.
7. If there is flow present, sample and characterize the flow as described in the Screening Procedures for Illicit Discharges, Procedural Memorandum SWPD14-04. [Note: Visual evidence of an illicit discharge can be used to request source identification.] Record analytical results in the Structure Inspection IHRR mobile application. (Samples can be collected and screened under wet weather conditions.)
8. Normally, water quality screening parameters are to be tested in the field. Handle any water samples that require laboratory analysis as follows:



- a. Call the Noman M. Cole Jr. Pollution Control Plan for instructions on how to collect samples for analysis of unique parameters and to inform them samples will be delivered.
  - b. Upon delivery to the laboratory, complete appropriate chain of custody forms. If necessary, record deviations from the standard procedures on the chain of custody forms. (Some examples of deviations include using a nonstandard container to collect the sample, not being able to place on ice a sample that needs refrigeration, going beyond the ideal holding time, etc.)
  - c. Indicate in the IHRR mobile application (Structure Inspection portion) the name of the laboratory where samples will be analyzed.
9. For VPDES-permitted facilities, inspect only the permitted outfalls connected to the County MS4 for evidence of significant pollutant loading.<sup>1</sup> If a pollutant and/or pollutant source can be readily identified visually or by odor, it is not necessary to collect a flow sample for analysis. If there is flow at the point of connection to the County MS4 and the source cannot be readily identified through visual inspection or by odor, a sample may be collected for screening. Notify DEQ following the procedures in Section II.G if significant pollutant loads are found.
10. Collect photographs. Examples of items to photograph are stormwater infrastructure, visible evidence of pollutants and possible pollutant sources at the site. If necessary, photograph stormwater features in such a way that they can be located again for reinspection. Note: Photos are associated with the facility or individual structures in the IHRR mobile application.
- a. When possible, photograph unique landmarks such as building fronts and signage that will help to identify the location.
  - b. Use date stamped photography, when possible. If the photo is too large to upload to the mobile application, ensure that the photograph has proper date and time stamps in the file details during the QC check.
11. If no evidence of significant pollutant loading is found, the required IHRR inspection is complete.
- a. Hit send (large arrow button) in the IHRR mobile application to save all information related to the point-of-connection inspection from the application to the GIS portal.
  - b. Inform the facility representative on site of any preliminary findings.
  - c. Offer to tour a non-VPDES permitted facility for a voluntary educational site evaluation. Explain the voluntary site evaluation process.
    - i. If the facility declines the voluntary site evaluation, note this in the "Permission Given" field in the IHRR mobile application and end the facility visit.
    - ii. If the facility gives permission for the voluntary site evaluation:
      1. In the site inspection portion of the IHRR inspection mobile application check "Yes" next to *Permission Given* to indicate that the evaluation is voluntary and not a required site inspection to identify the source of a significant pollutant load.

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<sup>1</sup> Do not inspect outfalls with direct discharges to state waters. Permitted direct discharges to state waters are under the regulatory authority of DEQ.

2. While educating the facility contact(s) about the elements included in the voluntary site evaluation, assess outdoor activities that could potentially contribute pollutants to the County's MS4. Discuss best management practices to help prevent or address pollutant discharges from the site.
12. If evidence of significant pollutant loading is found:
    - a. Inform the facility representative of the finding of illicit discharge of a significant pollutant load at the point of connection.
    - b. If the pollutant is suspected to be petroleum or hazardous, contact the FMO immediately to coordinate further response.
    - c. If the facility is VPDES permitted from DEQ, refer the facility to DEQ following the procedures in Section II.G. [Note: The facility contact may request assistance with identifying the source. The inspector(s) onsite may offer limited assistance to permitted facilities and facilities regulated by DEQ. The permittee or owner/operator of the facility is ultimately responsible for finding and eliminating the source of the significant pollutant load.]
    - d. Promptly notify the MS4 County Facilities Program Coordinator when evidence of significant pollutant loading is found at a County facility.
    - e. If neither 11.b nor 11.c above is met, continue with the facility inspection procedures in Section II.E below for non-VPDES, and non-hazardous dischargers.

#### **E. Identification of Pollutant Sources**

1. Introduce, or reintroduce, yourself to the facility representative.
  - a. For non-VPDES, and non-hazardous dischargers, request entry to the site for purposes of identifying the pollutant source. [If the facility representative(s) refuse to permit entry for the site inspection (or later refuse to continue the inspection), suspend the inspection and leave the property. Contact the County Attorney's Office immediately for assistance with obtaining an administrative warrant. Return to the property to resume the facility inspection only after obtaining the necessary legal documents.]
  - b. Explain the site inspection process.
  - c. Ask for a brief overview of the facility operations and determine what, if any, personal protective equipment (PPE) will be needed while onsite.
2. Once onsite, follow the procedures described in the Screening Procedures for Illicit Discharges (Procedural Memorandum SWPD14-04), as appropriate, to trace the pollutant through the stormwater infrastructure to its source. Document and photograph, where possible, in the Structure Inspection of the IHRR mobile application each stormwater feature that is checked for evidence of significant pollutant loading. In some instances, the source of the pollutant(s) may be immediately obvious. Use of best professional judgment is allowed in identifying the pollutant source, provided that the inspector documents the reasons for deviating from the formal source tracking procedure.
3. While onsite, conduct the facility inspection and complete the Site Inspection in the IHRR mobile application. It may be helpful to start by walking the perimeter of the site to observe storm drainage infrastructure and sheet flow drainage areas.

4. If the pollutant source(s) are identified at the time of inspection, inform the facility representative of the findings and the actions the facility representatives are required to take. Inspectors may request immediate discontinuation of the discharge.
5. Issue Corrective Action Notices and Notices of Violation as appropriate. Refer to the separate enforcement plan, Procedural Memorandum SWPD14-03, for more details.
6. Inform the facility representative of any referrals that will be made to other responsible local or state agencies.
7. Contact all appropriate local or state agencies where immediate action is required.
  - a. Call the Fairfax County FMO immediately to report releases of hazardous materials or other chemicals that pose an imminent threat to the environment.
  - b. Also notify DEQ immediately when the discharge of hazardous materials or a significant pollutant load enters or has the potential to enter state waters and/or if there is a significant ecological impact such as a fish kill.
  - c. For non-hazardous, non-emergency issues that may involve other agencies, refer to the latest Stormwater "Who to Call" List for the appropriate contact(s).

Note that inspections of facilities for which the Stormwater inspector has obtained evidence of significant pollutant loading may be carried out in conjunction with other permittee programs. The facility and appropriate agencies will be informed according to steps 6 and 7 above.

#### **F. Requests for Inspection Reports**

Inspection reports are subject to Freedom of Information Act (FOIA) requests, meaning anyone who requests a copy of a report is entitled to receive it. Entities that have been inspected (and others) have rights to obtain the documents under FOIA. FOIA requests may be verbal or written. The requester does not have to indicate that the request is a FOIA; a request for any County document is a FOIA automatically. With the assistance of a DPWES public information officer (PIO), requests should be appropriately documented as FOIA requests. FOIA law requires a response within five business days. If that is not possible, the DPWES PIO will ask for an extension of seven business days.

A caveat: Inspectors may offer a copy of an inspection report to the inspected entities without a request. Inspection reports provided in this way do not need to be tracked as FOIA requests.

Generally, fulfillment of FOIA requests will follow these steps:

1. A customer/person requests a copy of the inspection report.
2. The receiving inspector acknowledges the request and asks the requester to follow up with a request in writing (e.g., by email, handwritten note, or using the FOIA form). This will help to clarify what the requester is asking for and provide supporting documentation as the request is being fulfilled.
  - a. Provide the requester with a hard copy of the FOIA form (Appendix E). This is the preferred written document. Following guidance provided by the DPWES PIO, point out to the requester which items are necessary to fill in. Inform the requester that the form may be returned by mail, email, or in person.
  - b. Alternatively, the requester may send an email, write a letter containing the request, or telephone the inspector.

- c. Keep in mind that that FOIA request begins when the requester asks for documents. The requester might not follow up with a written request and is not required to fill out the form to receive the document; the request must be fulfilled unless the request was not clear.
3. Immediately inform the DPWES PIO of any verbal requests for inspection documents.
4. Forward any FOIA forms or other written requests to the DPWES PIO.
5. Provide the requested documents to the DPWES PIO.
6. The DPWES PIO will respond to the FOIA request and document fulfillment of the request and keep the FOIA tracker updated.

#### **G. Post-inspection Activities**

1. Perform quality control check in the IHRR desktop application. Photograph or scan any hard copy documents and save them to the corresponding facility folder on the network.
2. Inform relevant Fairfax County agencies of significant pollutant discharges that require responses from multiple Fairfax County agencies and enhanced coordination.
3. Note in the MS4 commenting application if it is unclear whether an outfall is an MS4 outfall and/or it is unclear whether a facility is within the MS4 service area. Inform the Stormwater GIS Section of any stormwater features that were missing or not properly located on the map for further investigation.
4. Where corrective action is needed and SPI has the lead enforcement responsibility, prepare the Corrective Action Notice or Notice of Violation according to the SWPD's enforcement guidelines, Procedural Memorandum SWPD14-03. When a discharge is referred to another Fairfax County agency, follow-up with that agency within 30 days for an update on the compliance status. Document the contact in the IHRR desktop application. Note when and how the discharge was addressed once compliance is achieved.
5. Schedule and conduct follow up site inspections as needed.

#### **H. Referral to DEQ for Further Action**

1. The MS4 permit requires that the County refer the following facilities to DEQ for compliance review under the Virginia State Water Control Law:
  - a. Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.
  - b. Facilities and operations identified under 40 CFR §122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.
  - c. Any VPDES industrial stormwater-permitted facility where there is evidence of significant pollutant loadings to the MS4.
2. Upon completion of a point of connection, permitted outfall or facility inspection, the inspector should determine whether the facility meets any of the three criteria listed above. If urgent action is necessary, notify DEQ by phone and/or email immediately (no later than 24 hours after discovering the discharge). For both urgent and non-urgent referrals, mail a formal "Letter to DEQ-Compliance Review Referral" (Appendix F) to DEQ's Northern Regional Office. Maintain a hard copy or scanned copy of the signed letter for County records.

3. Attempt to contact DEQ at least once within 30 days for an update on the status of DEQ's investigation. Document the contact in the IHRR database. If known, note in the database when and how the problem discharge was addressed by DEQ and the facility.

**I. Administrator of the SOP**

This SOP document is administered by the SPI section chief within SWPD. For more information about this document, contact SWPD at (703) 324-5500.

## **APPENDICES**

Appendix A: Stormwater Planning Division Confined Space Policy

Appendix B: Stormwater Inspection Letter

Appendix C: Printed Map Template

Appendix D: IHRR Inspection Report (example)

Appendix E: FOIA Request Form

Appendix F: Compliance Review Letter to DEQ



**APPENDIX A: Stormwater Planning Division Confined Space Policy**



**County of Fairfax, Virginia**

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

**DATE:** November 14, 2019  
**TO:** Stormwater Planning Division  
**FROM:** Craig Carinci, Director  
Stormwater Planning Division  
**SUBJECT:** Stormwater Planning Division Confined Space Policy Acknowledgement

It is the current the policy of this division that Stormwater Planning Staff shall not enter confined spaces regardless of the space being non-permit vs. permit required. In the event that entry is required, staff should utilize fully trained/certified attendants and entrants from Maintenance and Stormwater Management Division or approved contractors to enter the space. Below are additional Stormwater Planning Division (SWPD) policies regarding employee responsibilities pertaining to confined space.

- Entry is defined as any part of the body that breaks the plane of an opening to any confined space.
- SWPD staff may visually inspect from a safe location outside of confined spaces.
- SWPD staff shall not remove or open access panels to any confined space, such as but not limited to, manhole covers, doors, pipe end covers, etc without approval from the SWPD Director.
- Breaking the plane of an opening to a confined space with an electronic powered device is not allowed without written approval from the SWPD Director.
- SWPD staff shall attend documented Non-Entry Procedures for Confined Spaces training that has been approved by the Director.
- All SWPD employees must attend Confined Space Awareness Training as detailed in the Current Safety Manual.
- Refresher training will be conducted annually to ensure proficiency or: when changes in confined space operations present a hazard that has not been addressed in prior training, deviations from confined space procedures are discovered or inadequacies and/or deficiencies in staff knowledge is identified.

I have read and understand the policies identified above.

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

**Department of Public Works and Environmental Services**  
**Stormwater Planning Division**  
12000 Government Center Parkway, Suite 449  
Fairfax, VA 22035-0052  
Phone: 703-324-5500, TTY 711, Fax: 703-802-5955  
[www.fairfaxcounty.gov/publicworks](http://www.fairfaxcounty.gov/publicworks)



APPENDIX B: Stormwater Inspection Letter



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

DATE

«Recipients\_Name»  
«Recipients\_Address»  
«CITY\_STATE» «ZIP»

Reference: Stormwater Inspection of «Recipients\_Name»

Dear Sir or Madam:

Fairfax County operates a public storm drainage system called a Municipal Separate Storm Sewer System (MS4) to collect stormwater that runs off the land and transport it to waterways. Fairfax County's MS4 permit requires the County to prevent the discharge of pollutants into its storm drainage system. This includes pollutant sources such as sanitary sewer connections and wash water from everyday cleaning and maintenance activities. In addition to being harmful to the environment, Chapter 124 of the Code of Fairfax County, Virginia makes it illegal to dump or pour anything other than surface or subsurface water into the gutter, down a storm drain or into a stream.

The MS4 permit requires the County to identify and control pollutants in stormwater discharges from industrial and commercial facilities that are most at risk of discharging a significant amount of pollutants to the storm drain system. Therefore, Fairfax County has developed an industrial and high risk runoff (IHRR) inspection program. The County will be conducting inspections of industrial and commercial properties and working with businesses to prevent stormwater pollution. County representatives plan to visit your business mentioned in the reference line above during the weeks of **DATE** for the purpose of conducting a stormwater inspection.

Good housekeeping practices and on-site pollution control are some of the most effective ways to prevent water pollution. Fairfax County considers you a valued partner in its effort to ensure a healthy environment. Please contact me at 703-324-5500 with any questions or concerns you may have. We appreciate your cooperation and ongoing assistance to protect the waters of Fairfax County as well as the Chesapeake Bay.

Sincerely,

Shannon Curtis, Chief  
Watershed Assessment Branch

cc: **NAME**, Code Specialist II, Watershed Assessment Branch, Stormwater Planning Division,  
Department of Public Works and Environmental Services

Department of Public Works and Environmental Services  
Stormwater Planning Division  
12000 Government Center Parkway, Suite 449  
Fairfax, VA 22035-0052  
Phone: 703-324-5500, TTY: 711, Fax: 703-802-5955  
www.fairfaxcounty.gov



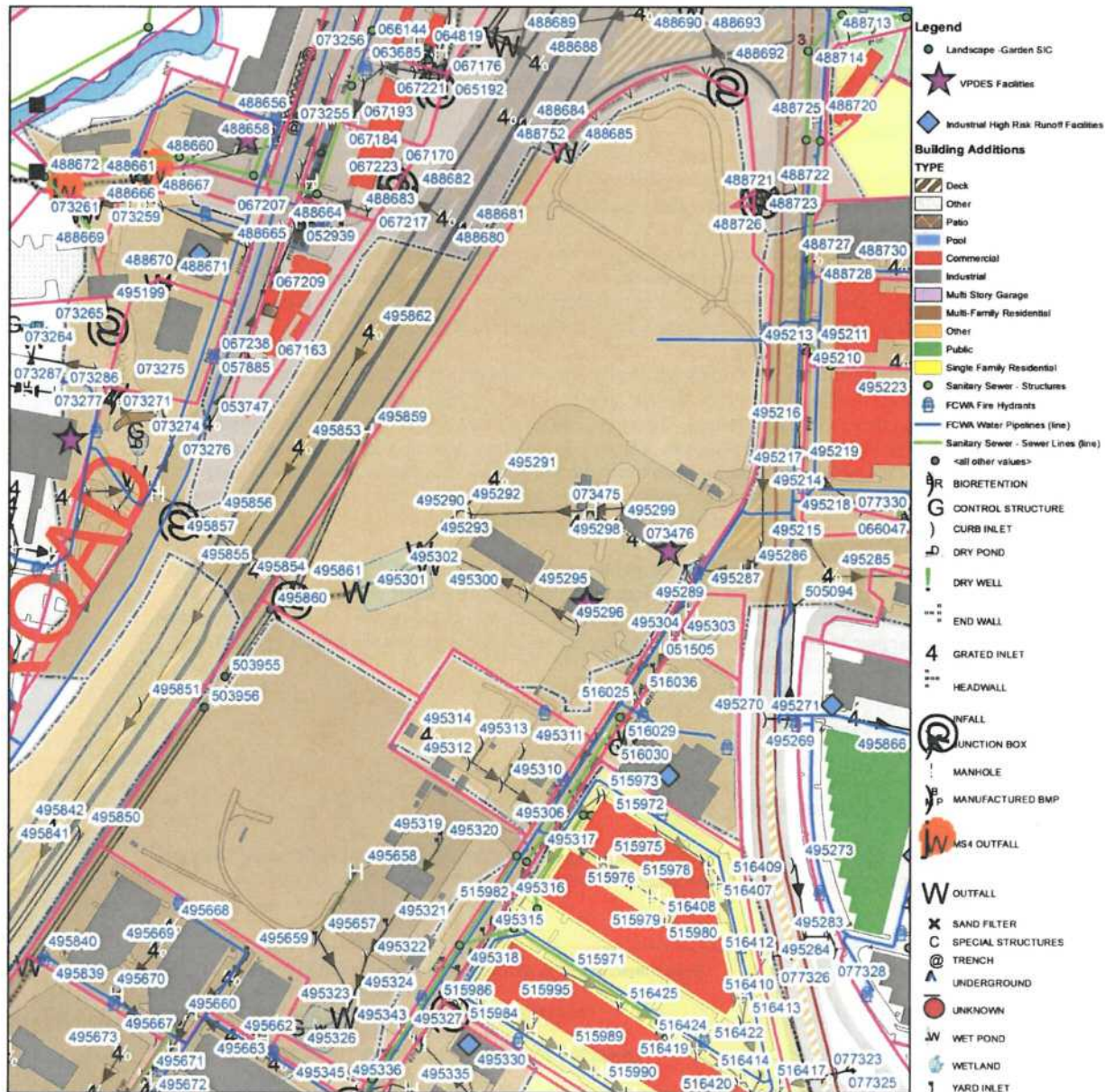


# APPENDIX C: Printed Map Template

Department of Public Works and Environmental Services  
 Stormwater Planning Division  
 12000 Government Center Parkway, Suite 449  
 Fairfax, VA 22035-0052  
 Phone: 703-324-5500, TTY: 711, Fax: 703-802-5955  
 www.fairfaxcounty.gov



ID	Location	Watershed
VA0001945	Kinder Morgan SE Terminal-Newington 8200 Terminal Road Newington, VA 22122	ACCOTINK CREEK



**APPENDIX D: IHRR Inspection Report (example)**

Revision #2, November 2019

**IHRR Inspection for Facilities in MS4**

Inspector:	Date:	Time:
Facility Name:	Building Description: <input type="checkbox"/> Industrial Park <input type="checkbox"/> Strip Mall <input type="checkbox"/> Multi-Story Commercial Building <input type="checkbox"/> Stand Alone	
Site ID (FIPID):	Address:	Suite:
Facility Closed: <input type="checkbox"/>		
Facility Name Change: <input type="checkbox"/>		
Watershed:	City:	Zip:
BOS District:		
Facility Rep./Phone/Email:		
Owner/Phone/Email:		
SIC Code:	Facility Activity:	

Stormwater Drainage Structure Inspection		Weather Conditions: Wet/Dry (48 hrs. no rain > 0.1")				
STMN						
MS4 Connection?	Yes/No					
Maintenance Responsibility	FFX VDOT Private					
Discharges to?	River/Stream/Lake Pond/Detention Wetland/Woods/Ditch					
Flow Rate	Light Substantial No Flow					
Storm Drain Marked?	Previously Marked Marked during Inspection No					
Sample Field Test Results						
Collection Time	Analysis Time	Surface Water Quality Standards Limits				
Water Temp (°C)		≥32				
pH		<6 or >9				
Specific Conductivity (µS/cm³)		>1,000				
Copper (mg/l)		>0.5				
Phenol (mg/l)		>0.4				
Detergents (mg/l)		>0.25				
Fluoride (mg/l)		>0.5				
Ammonia (2°) (mg/l)		>0.3				
Chlorine (2°) (mg/l)		>0.4				
Lab Samples Collected? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, indicate sample type and laboratory						

STMN (continued)							
Physical Indicators							
Odor (flow present)	Sewage Rancid/sour Petroleum Chemical	Sulfide Other NA					
Color (flow present)	Clear Brown Gray Yellow Orange	Red Green Other NA					
Turbidity (flow present)	Clear Cloudy	Opaque NA					
Floatable	Sewage Suds Petroleum	Litter Other NA					
Deposits/Stains	Oily Flow Line Paint	Residue Other NA					
Structure Flow Inhibited?	Partially Inhibited Totally Inhibited NA <i>State Why (e.g. sediment, litter, other)</i>						
Pipe Algae Growth	Abnormal Vegetation Algae Other NA						
Comments:							

NA = Not applicable



**FACILITY INSPECTION**

Required:  Yes  No    Permission Given:  Yes  No  NA

Were all storm drainage systems inspected?								<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	
List on-site Structural BMPs (i.e. dry/wet ponds, OWS, vegetated swales). Indicate condition.									
Any manufacturing, processing, or raw material storage outside w/ potential to impact storm?				Yes/No		If Yes, briefly describe:			
Any aboveground, outdoor storage of materials? Include stockpiles/chemicals/hazardous materials				Yes/No		If no, skip to Vehicle Operations			
List container type, materials, and amounts			Are materials next to a storm drain?	Condition of Container (if applicable)	Containers appropriately sealed?	Containers appropriately labeled?	Secondary containment provided?	Signs of leaks or stains	Comments
			Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
			Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
			Y/N		Y/N/NA	Y/N/NA	Y/N	Y/N	
Can vehicle operations impact storm drains?				Yes/No		If no, skip to Parking Lot/Property			
A. Can loading/unloading activities potentially discharge pollutants to the storm drain?				Yes/No/NA					
B. Are fueling operations present? If present list runoff control measures if any.				Yes/No/NA					
C. Are vehicles repaired outside?				Yes/No/NA					
D. Does vehicle washing occur that could go to a storm drain?				Yes/No/NA					
Parking Lot/Property									
A. Are they free of litter?				Yes/No					
B. Are they free of stains (e.g., petroleum, paint)?				Yes/No					
C. Can excessive solids/pollutants runoff to the MS4? (Including Sheet Flow)				Yes/No					
D. Are bins/roll off containers leaky or uncovered?				Yes/No/NA		Who owns the containers?			
Non Structural BMPs									
A. Is staff trained to prevent stormwater pollution? (If yes, indicate frequency.)				Yes/No/NA					
B. Are spill kits available and labeled?				Yes/No/NA					
Comments:									





APPENDIX E: FOIA Request Form

Required fields identified



County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities

Virginia Freedom of Information Act (VFOIA) Request Form

Name:  required Date:  required

Organization:  required Phone:  required

Email:  required Fax:

Street Address:

City:  State:  Zip Code:

I am requesting the following records (please be as specific as possible):

required - example - Please email a copy of the final inspection report on (name of business) that was conducted on (date). Submit this request to the inspector.

Please identify any County agencies who would be in the custody of requested records (if known):

Public Works and Environmental Services, Stormwater Planning Division, IHRR/IDID Section

**Charges:**

VFOIA permits a public body to make reasonable charges not to exceed the actual cost incurred in accessing, duplicating, supplying, or searching for the requested records. You may request an advance estimate of the charges. If the estimated charges exceed \$200, payment may be required prior to processing your request.

**VFOIA Disclaimer:**

Contact information, and any other information that you submit on this form may be subject to disclosure under VFOIA.

To submit your VFOIA Request, please email this form to [FOIA@fairfaxcounty.gov](mailto:FOIA@fairfaxcounty.gov)

Mar. 2019

Fairfax County is committed to nondiscrimination on the basis of disability in all county programs, services and activities. Reasonable accommodations will be provided upon request. For more information, call 703-324-7329, TTY 711.

Fairfax County Office of Public Affairs  
Countywide FOIA Office  
12000 Government Center Parkway, Suite 551  
Fairfax, VA 22035  
703-324-7329  
[www.fairfaxcounty.gov/publicaffairs/foia](http://www.fairfaxcounty.gov/publicaffairs/foia)

Appendix F: Compliance Review Letter to DEQ



County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

**DATE**

Ms. Anna Tuthill  
Regional Industrial Stormwater Coordinator  
Virginia Department of Environmental Quality  
Northern Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

Reference:

Dear Ms. Tuthill:

In accordance with Part I.B.2.g.5 of Fairfax County’s Municipal Separate Storm Sewer System (MS4) permit, “the permittee shall refer the following facilities to the Department of Environmental Quality (DEQ), Northern Regional Office, for DEQ compliance review under the Virginia Water Control Law:

- a. Facilities and operations having non-stormwater discharges that do not have coverage under an existing VPDES permit.
- b. Facilities and operations identified pursuant to 40 CFR Part 122.26(b)(14) with manufacturing, processing, or raw materials storage outside that do not have coverage under an existing VPDES industrial stormwater permit.
- c. Any VPDES industrial stormwater permit facility where there is evidence of significant pollutant loadings to the MS4.
- d. Facilities that do not submit signed copies of Discharge Monitoring Reports (DMRs) to the permittee as required under a VPDES industrial stormwater permit.

The above referenced facility is being referred to DEQ in accordance with [LETTER] from the above list.

**OBSERVATIONS**

Please report any DEQ compliance review findings or conclusions regarding this facility to the following address:

Mr. Shannon Curtis, Chief  
Fairfax County Department of Public Works and Environmental Services  
Watershed Assessment Branch  
Stormwater Planning Division  
12000 Government Center Parkway, Suite 449  
Fairfax, VA 22035-0052

Department of Public Works and Environmental Services  
Stormwater Planning Division  
12000 Government Center Parkway, Suite 449  
Fairfax, VA 22035-0052  
Phone: 703-324-5500, TTY: 711, Fax: 703-802-5955  
[www.fairfaxcounty.gov/publicworks](http://www.fairfaxcounty.gov/publicworks)



Ms. Anna Tuthill  
**SUBJECT**  
Page 2 of 2

We appreciate your cooperation in this matter. Please contact Takisha Cannon at 703-324-5500 with any questions or concerns you may have regarding the above request.

Sincerely,



Shannon Curtis, Chief  
Watershed Assessment Branch

cc: Takisha Cannon, Ecologist IV, Watershed Assessment Branch (WAB), Stormwater Planning Division (SWPD), Department of Public Works and Environmental Services (DPWES)

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P10

Post-Construction Stormwater Inspection and Maintenance Policies and Procedures

VSMP Permit Number VA0088587  
9-30-2022



# Post-Construction Stormwater Inspection and Maintenance Policies and Procedures

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**January 2016  
Revised April 2017  
Revised April 2020  
Revised June 2021**

**Prepared by:**



Fairfax County Department of Public Works and Environmental Services (DPWES)  
Maintenance and Stormwater Management Division (MSMD)  
10635 West Drive  
Fairfax, Virginia 22030

**In consultation with:**



GKY & Associates, Inc.  
4229 Lafayette Center Drive  
Suite 1850  
Chantilly, VA 20151

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## Introduction

Section 9VAC25-870-112 of the Virginia Administrative Code, Section 124-2-10 of Fairfax County Code and Part I.B.2 of Fairfax County's Phase I Municipal Separate Storm Sewer System (MS4) Permit (VA0088587 Part I.B.2.h) all include requirements for the long term operation and maintenance of stormwater control measures (SCM) including stormwater management facilities and Best Management Practices (BMPs). With approximately 8,000 SCMs located within the unincorporated Fairfax County boundary, this represents both a regulatory mandate as well as a considerable program investment toward protecting the general public's health, safety, and property through the maintenance of properly functioning stormwater management infrastructure.

Virginia code VAC15.2-625 delegates the responsibility of performing inspections and maintenance of public infrastructure to the Director of the Department of Public Works and Environmental Services (DPWES) of Fairfax County. The Maintenance and Stormwater Management Division (MSMD) of the DPWES, hereinafter called "MSMD" or "County", provides direct maintenance for approximately 30% of the noted SCM inventory, which primarily includes dry ponds serving residential areas. These SCMs or "facility(ies)" are referred to as "public facilities." The remaining 70% of the SCM inventory are referred to as "private facilities" and are inspected by MSMD, but maintained by the facility owner or operator. This presents some unique programming challenges to ensure private facility owners are educated and aware of proper maintenance requirements and able to execute the necessary maintenance work.

This document provides an overview of the policies and procedures for the inspection and long term maintenance of both public and private facilities located in Fairfax County. Public facilities are inspected and maintained per County schedules and guidelines by MSMD. While private facilities must be maintained by the owner, the MSMD also inspects all private facilities at least once every five years to ensure that they are being properly maintained.

The following sections document the County's authorities, guidelines, required records, and procedures for the inspection and maintenance of both public and private SCMs. County enforcement protocols for private facilities, with attendant timelines and penalties, are also reviewed.

## Authority and Regulations

The Code of Fairfax County includes several ordinances that align to facilitate the necessary authority to comply with state code and with the County's MS4 permit. The Stormwater Management Ordinance (Chapter 124); Erosion and Sediment Control Ordinance (Chapter 104); Zoning Ordinance (Chapter 112); and Chesapeake Bay Preservation Ordinances (Chapter 118) all provide either direct or tangential County authority to manage stormwater in accordance with the terms of Virginia's Stormwater Management Act, Erosion and Sediment Control Law and Chesapeake Bay Preservation Act, as well as the County's MS4 permit. In addition, the County's Public Facilities Manual (PFM) serves as the primary administrative tool supporting these ordinances, outlining the County's land development and management technical standards, specifications, and accepted practices.

The following is a summary of regulations and requirements which specifically apply to both public and private SCMs. While these concepts are reflected across all of the authorities and ordinances noted above, the primary authority is referenced in each summary subsection.

## Stormwater Management Regulations

It is the responsibility of the owners of SCMs to maintain the proper functioning of a facility, per its original design. Maintenance should be performed on a regular basis and deficiencies addressed within an advised and reasonable timeline and per facility specific maintenance schedules and guidelines, or the default maintenance requirements noted

in the original design specifications or within the Attachment A of the recorded Private Maintenance Agreement (PMA). Where a PMA exists, the PMA and Stormwater Management Ordinance §124-2-10 serve as the primary, regulatory governing authority. If a PMA does not exist, then the County uses the requirements specified on the site plan as the primary governing authority, per Zoning Ordinance §18-901(1) and 17-108(6).

### **Inspection/Maintenance Records**

For facilities constructed after July 1, 2014 under the Stormwater Management Ordinance, the facility owner must have a system in place, in accordance with §124-2-5 and 124-2-10, to accommodate the performance and documentation of inspections and maintenance on an annual basis.

Public and private SCM records are maintained electronically by the County. Private facility owners may maintain copies of their records in paper or electronic format, provided they are accurate, current, legible, and easily accessible. All private and public SCMs are noted in MSMDs database, for regulatory and inventory purposes. The database, Infor Enterprise Asset Management (EAM) system (Infor-EAM™), includes information such as the general facility location, acres treated, type of facility, inventory date, bond release date, last inspection date, etc.

### **Inspection Authority**

The County has established an inspection program, in accordance with the County Stormwater Management Ordinance (§124-2-5 and 124-2-10), and may enter establishments for the performance of reasonable inspections or investigations. PMAs provide the County with authority to enter a facility to conduct inspections and related activities to ensure the facility functions per the approved design plan. This program includes routine inspections, random regulatory inspections, or investigations resulting from complaints or indications of potential discharge issues. In addition, many County PMA documents also include the County's right to perform maintenance at the facility owner's expense if necessary to achieve adequate functionality.

Regardless of whether a PMA exists, the County will notify the person responsible for the property that the County intends to conduct a site inspection. In the event there is no PMA, access to the inspection site will be obtained in accordance with applicable laws.

## **Public Stormwater Facility Inspection and Maintenance**

### *Maintenance Schedule and Guidelines*

Public SCMs should be maintained according to the established maintenance protocols specific to public facilities as well as any facility specific maintenance schedules and guidelines, County ordinances, and any original design specifications that apply to the specific facility.

Routine maintenance for public ponds<sup>1</sup> is performed once or twice per year. Routine maintenance for ponds includes grass mowing, basic channel clearing, trash removal, sign installation and dewatering. Non-pond facility routine maintenance is performed on the following Green Stormwater Infrastructure (GSI) facilities: tree filters, bioretention facilities, green roofs, permeable pavement facilities, and vegetated swales. All other non-pond facility types are maintained as needed via non-routine maintenance work orders issued as a result of observed deficiencies during an annual inspection. Out of turn inspections and non-routine maintenance may be initiated by a complaint received by MSMD. GSI facility routine maintenance includes trash removal, sediment removal, and removal/trimming of overgrown and unwanted vegetation.

---

<sup>1</sup> The County is in the process of revising the routine maintenance program for Constructed Wetlands (WL).



Items such as tree and invasive vegetation removal, major sediment removal, concrete repairs, etc. on ponds, for example, are considered non-routine maintenance tasks. Non-routine needs are prioritized in order to address safety, urgent needs and to manage resources efficiently. Please refer to the Work Flow Process Charts (Appendix C) to see an overview of the typical workflow and responsible parties. Table 1, below, reviews maintenance frequencies, by facility type.

### Inspections

The purpose of public facility inspections is to assess and record the current, point-in-time condition of the public SCM compared to its original design on either an annual or biennial (once every two years) basis. MSMD’s biennial inspections reflect an alternative inspection schedule, as allowed in the County’s MS4 Permit [PART I B.2) h) 1) (b)]. The alternative inspection schedule was developed to reflect the County’s assessment of the risk of failure based on facility type and frequency of routine maintenance. Facilities that receive routine maintenance one or more times per year are scheduled for biennial inspections rather than annual. This reduced inspection frequency proves sufficient to maintain proper function because the County’s routine maintenance schedule provides additional visual evaluation of each facility throughout the year. For all other facility types without routine maintenance schedules, MSMD performs an annual inspection of those facilities. Table 1, below, notes scheduled inspection and maintenance frequencies by facility type.

Table 1-Maintenance and Inspection Frequency

Facility Type	Routine Maintenance Frequency	Inspection Frequency
Amended Soil	Not Applicable	Annual
Bioretention	Annual (4x/year)	Biennial
Cistern/Rain Barrel	Not Applicable	Annual
Dry Pond (Non-regional)	Annual (HOA 1x/year, non-HOA 2x/year)	Biennial
Dry Pond (Regional)	Annual (4x/year)	Annual
Floating Treatment Wetland	Annual (1x/year)	Annual
Green Roof	Annual (4x/year)	Biennial
Manufactured BMP	Not Applicable	Annual
Open Space Areas	Not Applicable	Annual
Parking Lot Detention	Not Applicable	Annual
Permeable Pavement	Annual (1x/year)	Biennial
Reforestation	Not Applicable	Annual
Rooftop Detention	Not Applicable	Annual
Rooftop Disconnection	Not Applicable	Annual
Sand Filter	Not Applicable	Annual
Tree Filter (Including Filterra)	Annual (4x/year)	Biennial
Infiltration Trench	Not Applicable	Annual
Underground Storage/Detention	Not Applicable	Annual
Vegetated Filter Strip	Not Applicable	Annual
Vegetated Swale	Annual (4x/year)	Biennial

Facility Type	Routine Maintenance Frequency	Inspection Frequency
Wet Pond (Non-regional)	Annual (HOA 1x/year, non-HOA 2x/year)	Biennial
Wet Pond (Regional)	Annual (4x/year)	Annual
Wet Swales <sup>2</sup>	Not Applicable	Annual
Wetland (Constructed Wetland)	Not Applicable	Annual

The inspection protocol identifies any visible deficiencies that prevent the facility from functioning as designed (i.e., non-functional). Further, these protocols are also intended to ensure the safety of inspection personnel and inform the owner and general public as part of the County’s overall education and outreach efforts. This section is a brief process overview; detailed procedures are contained in the County’s Inspections SOP (Inspection SOP – Appendix D).

Inspections on public pond facilities are scheduled within a week of annual routine maintenance, so that the maintenance contractor’s work can be verified and to ensure overgrown vegetation does not hamper the facility’s inspection. Prior to inspection, inspectors prepare an inspection folder with any relevant site maps, forms, and letters. Unlike private facility inspections, a pre-inspection letter to the facility owner is not part of the inspection preparations; however, inspectors do attempt to check-in with the property owner, manager, or tenant to advise of their presence and purpose prior to the inspection. This brief check in with the property owner is done primarily as a courtesy, whenever feasible; however, some public facilities - - such as schools, child care centers, and assisted living communities - - have required check-in and credentialing processes which must be followed for the safety and consideration of the students and/or residents. Unless previously arranged with the owner or if the facility is located in a high traffic area, inspections take place during normal working hours, Monday through Friday, 8:00am to 5:00pm. The County does notify a property owner, and when applicable adjacent property owners, when non-routine maintenance work, as described above, is scheduled. All inspections must also follow proper safety procedures, especially those pertaining to removal of manhole covers and Confined Space Entry (29 CFR 1910), the latter of which is not routinely undertaken under this program.

MSMD has created a unique inspection form for each facility type, with relevant sections and maintenance items. Inspection forms are included in Appendix A of this document, and all forms follow the same general format. Maintenance items are scored on a range of 1-3, with (1) for severe issues with a high priority and (3) for minor items with a lower priority. Maintenance items rated at (3) still have the potential for significant future issues, if not addressed in a reasonable amount of time. The forms also allow for a notation of ☹, which means items do not currently need non-routine maintenance and/or should be addressed through regular routine maintenance, or N/A which means that item is not applicable to the specific facility being inspected.

Photographs, sketches, measurements, and observations are documented, as appropriate to the facility and per inspection procedures. For public facilities, any additional measurements that will be necessary in order to generate a work order are also taken while in the field, per the Field Measurements and Work Order Preparation SOP (Appendix D).

Most public SCMs are dry ponds serving residential areas. During inspection of all facility types, however, the most common maintenance issues encountered include the following:

- Blockages
- Structural issues
- Joint issues
- Vegetation (or lack thereof)
- Animal holes/burrows
- Erosion/undermining/cave-ins
- Trash/debris
- Sedimentation
- Algal/water quality issues
- Encroachment

<sup>2</sup> The County is in the process of developing an inspection form for Wet Swales (WS).

Inspectors should also remain alert for signs of potential illicit discharges or public hazards, both of which require immediate reporting from the field. Any indications of possible illicit discharges are reported to the Fairfax County Industrial and High Risk Runoff/Illicit Discharge and Improper Disposal (IHRR/IDID) staff, and conditions that represent a public safety hazard (such as actively failing dam embankments, missing/loose manhole covers, etc.) are immediately reported to MSMD.

After the inspection is complete, the inspector prepares and submits an inspection report that is reviewed internally, and a work order scope and work narrative are generated, if applicable. Work orders and related narratives are submitted per the guidelines of the Field Measurements and Work Order Preparation SOP (Appendix D). All information is entered into the County’s Infor-EAM™, with special attention to noting any changes to safety, access information, or incorrect information that could impact future inspections.

Work orders are then submitted by MSMD to in-house crews or to a contractor, as appropriate to address the deficiency(ies), with a request for proposals. Once the proposal for work has been submitted and authorized, maintenance work is scheduled for completion. Scheduling non-routine maintenance takes approximately two months from the time of conducting the facility’s routine, annual maintenance.

During inspections, MSMD and their contractors identify any necessary non-routine maintenance work. Each inspection form is tailored to the type of facility being inspected and has a standardized prioritization process. Table 2 shows how MSMD prioritizes and schedules this work for all public facilities.

*Table 2-Priority and Targeted Response Time*

<b>Assessed Condition</b>	<b>Priority</b>	<b>Targeted Response Time</b>
<b>Good / Excellent</b>	No Work Required (NWR)	None
<b>Fair</b>	3	0 to 2 years
<b>Poor / Non-Emergency</b>	2	2 weeks to 1 year
<b>Failed – Emergency (house flooding, structural endangerment, roadway flooding)</b>	1	Immediate to 2 weeks

During the process of maintenance, required work may move to a lower priority. For example, a Priority 1 (P1) issue can be downgraded to Priority 2 (P2) if a short term solution, such as stabilizing a cave-in, can be implemented, allowing time for the design of a longer-term structural solution. In other instances the targeted response time may not be met due to factors outside of the county’s control, such as land ownership affecting easements and access, facilities that need to be re-designed, and weather events. In all instances, the county will initiate measures to ensure public safety and take action to correct critical deficiencies in a timely manner. In some instances, a facility designated as Priority 3 (P3) will not be maintained because the maintenance items are extremely minor in nature and not critical to the safety and performance of the system. In those cases, the P3 designation will remain and maintenance will be deferred until the benefit of performing the work exceeds the cost to do so.

*Follow-up*

All County maintenance work is tracked in the Infor-EAM™ database and through a maintenance tracking spreadsheet. Maintenance contractors, for both routine and non-routine tasks, submit photos upon completion of all maintenance work orders. Photos, completion dates, and costs are included and updated on the work order in Infor-EAM™ and also in the maintenance tracking spreadsheets. For public facilities, the tracking spreadsheets are primarily used to track

costs, completion dates and any related notes on work completed/not completed. MSMD verifies routine maintenance completion via submitted photographs, and project completion reports are generated for all non-routine maintenance work.

## Private Stormwater Facility Inspection and Maintenance

### *Maintenance Schedule and Guidelines*

Private SCMs must be maintained by the owner according to established maintenance schedules and guidelines as noted in the Private Maintenance Agreement (PMA), County guidelines, and the original design specifications. Maintenance should be performed on a regular basis and deficiencies addressed within an advised and reasonable timeline, as noted in the recorded PMA. Should the facility not have a PMA in place, then County specific maintenance schedules, guidelines, and/or the default maintenance requirements noted in the original design specifications will be the governing directives.

Private facility owners must also maintain accurate records on site and make them available to the County upon request. The County also inspects all private facilities at least once every five years.

Private SCMs include a wide variety of types, including:

- Amended Soils
- Bioretention Facilities
- Cistern/Rain Barrel
- Ponds (Dry or Wet)
- Green Roofs
- Manufactured BMPs
- Parking Lot Detention
- Permeable Pavement
- Rooftop Disconnection
- Reforestation
- Rooftop Detention
- Sand Filters
- Tree Filters
- Infiltration Trenches
- Underground Detention
- Vegetated Filter Strips
- Vegetated Swales
- Constructed Wetlands

## Inspections

As previously noted, the purpose of facility inspections is to regularly assess and record the current condition and functionality of the SCM compared to its original design. Informing owners of their facility's condition in a technically accurate but easily understood manner is particularly important for the private facility inspection process. Facility owners may lack the technical background to fully comprehend the scope of maintenance requirements, the means of correcting noted deficiencies, and/or an understanding of the full risks of failing to properly maintain their facilities. The general inspection procedure for private facilities, with a few notable exceptions, is the same as that for public facilities. However, the reporting for private facilities is specifically designed to facilitate the private owner's understanding of the maintenance items identified in the inspection, if any, and responsibility to resolve any noted maintenance issues.

The County begins the private facility inspection process by preparing a pre-inspection letter that is mailed to the private facility owner at least two weeks prior to the County's inspection. The County also conducts a thorough pre-inspection research process through which it reviews facility information such as site plans, available "as built" drawings, GIS, property ownership information, PMAs, etcetera. This pre-inspection research also ascertains any prior noted deficiencies, maintenance completed, known access issues, or other conditions of note prior to the County's inspection. If there are known or previously recorded access issues, such as locked gates, excessive vegetation, etc., the inspectors may also contact the facility owner to ensure appropriate site access is provided for the inspection.

The County then prepares an inspection folder with any maps, forms, letters, and public outreach materials for use on the day of inspection. Inspections are conducted in the same manner as that for public facilities, with the exception that detailed measurements are not required for the purpose of preparing a work order for any noted deficiencies, as any necessary maintenance is the responsibility of the facility owner.

Within approximately thirty (30) days of a completed inspection, the County provides the facility owner with a Notice of Inspection (NOI), which includes several pertinent site and informational materials per the County's Inspection SOP. The primary documents submitted are a cover letter and a Condition Assessment Report (CAR) with photos. The CAR is a detailed report explaining the observations and findings resulting from the inspection, with direct reference to attached and captioned photos. An orientation sketch is also typically included as part of the CAR, as an aid to understanding the facility layout. The CAR summarizes deficiencies as follows:

- No deficiencies were noted during the assessment; or
- Maintenance is recommended to ensure continued functionality of the facility; or
- Immediate maintenance is required to restore proper functionality of the facility.

A blank Maintenance Activity Report (MAR) is also included with NOI for facilities with recommended or required maintenance. A MAR is provided so the owner may document and verify that the necessary maintenance work has been completed; this form is completed and submitted back to the County, along with photos of the completed work. For facilities with recommended maintenance, the receipt of a completed and acceptable MAR is not a requirement to close the inspection files. However, for facilities with required maintenance, the receipt of a completed and acceptable MAR is the trigger to close the inspection files. Examples of a NOI cover letter, a CAR, and a MAR are included in Appendix B. Special care is taken to make certain pictures and text are presented clearly to facilitate owner understanding, noting that the owner may or may not have any experience dealing with facility functionality and maintenance requirements. All documentation must clearly reference the facility design and function, with any necessary maintenance needs placed in clear context.

As with public facility inspections, the basic inspection information is entered into the County's Infor-EAM™, with special attention to noting any changes to safety, access information, or incorrect information that could impact future inspections.



For private inspections, any contracting bids and maintenance are the responsibility of the facility owner. The County tracks the receipt of the NOI and any responses in order to determine whether noted deficiencies are properly addressed or whether further action may be necessary, as noted below.

### *Tracking Protocols*

For facilities with required maintenance the NOI is mailed to the private facility owner via certified mail and returned certified mailing slips are tracked by delivery date. If no MAR is received, reminder letters are sent out 45 days, and again 90 days, after initial NOI receipt. If the owner responds with a fully completed MAR, within either the 45 or 90-day allowable time frames, then the inspection files for that facility are closed out on the County tracking database and no further follow-ups or actions will take place until the next scheduled inspection or receipt of a complaint by the general public. Once the NOI letter is received by the facility owner, he/she has a total of 135 days to respond or the case is sent to enforcement for further action. For facilities with recommended maintenance, tracking will stop once the NOI is mailed and the inspection files will be closed-out. All mailing dates and any MAR received dates are recorded in a tracking spreadsheet for each year's worth of private inspections, along with the Enforcement-submittal date and comments on any non-MAR owner responses. These dates are also saved in the Infor-EAM™ database.

## **Private Stormwater Facility Enforcement**

### *Enforcement Authority – Facilities with a Private Maintenance Agreement (PMA)*

Should the owner fail to maintain the SCM in functioning order and in keeping with its approved plan and maintenance guidelines, the terms of the recorded PMA may be enforced or the county may pursue civil penalties or seek injunctive relief.

### *Enforcement Authority – Facilities without a PMA*

Should the owner fail to maintain the SCM in accordance with its approved plan, and a PMA is not recorded, the County has the following option available:

- Enforcement through the Zoning Ordinance (Chapter 112 of the County Code)
  - §17-108.6: Requires use and structures' continued compliance with all applicable regulations regarding drainage, design criteria/specifications as noted in the Public Facilities Manual (PFM), and other site plan requirements as noted.
  - §18-901-3: Authorizes the County to notify the facility owner, requesting corrective action via a Notice of Violation (NOV) and to pursue the civil and criminal penalties noted below in the "Penalties for Non-Compliance" section.

### *Enforcement and Compliance Timeframes*

The first step of any enforcement action is to verify that the facility ownership has not changed since the initial inspection. If ownership has changed, then the NOI package is mailed to the new owner of record and the response times are re-established for the new owner. Otherwise, the facility will proceed through the enforcement process.

At the end of the response expiration period (135 days), MSMD will provide advance notice to the property owner (Notice of Maintenance Verification (NOMV) letter) of another site inspection to determine if maintenance needs previously specified in the NOI have been fully completed. MSMD will then coordinate with the Land Development Services Permitting and Code Administration (PACA) to perform the inspection. If MSMD determines maintenance needs have been fully completed, the facility will be removed from enforcement. If it is determined maintenance needs have not been fully completed, and the facility is deemed non-functional, MSMD will transfer the enforcement case to PACA to issue a Notice of Violation (NOV) and provide further enforcement actions.

### *Notice of Violation (NOV)*

The County's DPWES MSMD and PACA review the enforcement documentation package and, if appropriate, the PACA sends a Notice of Violation (NOV) to the facility owner. The owner has 60 days to correct the deficiencies or may choose to appeal the NOV within the timeframes set forth in the regulations. During any necessary enforcement period, the PACA works closely with the Office of the County Attorney (OCA) to pursue any civil penalties and/or injunctive relief when additional enforcement actions are deemed necessary.

### *Penalties for Non-Compliance*

Failure to comply with an NOV issued under the Stormwater Ordinance or the Zoning Ordinance may result in legal action to obtain compliance through civil penalties or injunctive relief. The severity of civil penalty sought depends on the legal basis for enforcement (Zoning Ordinance or Stormwater Ordinance) and the severity of the violation.

### *Appendix A-Inspection Forms*

There are 17 inspection forms used by the County, representing the increasingly complex and sophisticated range of common SCM types within the County. Some forms are used for more than one facility type. All forms follow the same basic format and scoring protocol. Facility types and forms are as follows:

- A-1: Amended Soils Inspection Form
- A-2: Bioretention Inspection Form
- A-3: Cistern/Rain Barrel Inspection Form
- A-4: Pond/Wetland Inspection Form
- A-5: Green Roof Inspection Form
- A-6: Manufactured BMP Inspection Form
- A-7: Parking Lot Detention Inspection Form
- A-8: Permeable Pavement Inspection Form
- A-9: Rooftop Disconnection Inspection Form
- A-10: Reforestation/Floating Treatment Wetland Inspection Form
- A-11: Rooftop Detention Inspection Form
- A-12: Sand Filter Inspection Form
- A-13: Tree Filter Inspection Form
- A-14: Infiltration Trench Inspection Form
- A-15: Underground Detention Inspection Form
- A-16: Vegetated Filter Strip/Open Space Inspection Form
- A-17: Vegetated Swale Inspection Form

A-1: Amended Soils Inspection Form

<b>Amended Soils Inspection Form</b>				Inspector: _____	Cert <input type="radio"/>			
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector: _____	Cert <input type="radio"/>			
			Date: _____					
Site ID: _____	Facility ID: _____	Facility Name: _____						
Address: _____		Coordinates / ParID : _____						
		District: _____						
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	①	High Priority / Non-functional				
			②	Moderate Priority / Approaching Non-functional				
			③	Low Priority / Functional				
			⊙	No Priority / Continue Routine Maintenance				
			⊗	Not Applicable				
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3			
1	2	3						
Notes / Specifications: _____			Facility Specific Info: _____					
Facility Type / Addl Facility Info: _____								
Signs			Weather Conditions					
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:			
③ ⊙ ⊗		Facility Sign						
③ ⊙ ⊗		Facility Labeling	Data Source: _____					
			Current weather conditions? _____					
Accessibility								
Access Comments: _____			<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>			
New Access Comments for EAM: _____			Locked Gate / Fence		Coordinate with Owner			
			Other: _____		Return for Re-inspection			
SCORE	PHOTO	DESCRIPTION			Request Photos from Owner			
① ⊙ ⊗		Overall Facility Access			Contact MSMD			
① ② ③ ⊙ ⊗		Component Access: _____			Other: _____			
Amended Soils Area								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
① ⊙ ⊗		Impervious Area Encroachments <i>Description:</i>						
① ⊙ ⊗		Evidence of Excessive Fertilizer / Chemicals						
① ② ③ ⊙ ⊗		Obstructions to Infiltration <i>Description / Area:</i>						
① ② ③ ⊙ ⊗		Trash / Debris / Sediment <i>Description / Amount:</i>						
① ② ③ ⊙ ⊗		Erosion / Bare Spots <i>Area:</i>						
① ② ③ ⊙ ⊗		Grass / Groundcover Condition						
① ② ③ ⊙ ⊗		Other: _____						
Other								
SCORE	PHOTO	DESCRIPTION	LOCATION					
① ② ③ ⊙ ⊗		Encroachments						
① ② ③ ⊙ ⊗		Modifications						
① ② ③ ⊙ ⊗		Mosquito Habitat						
① ② ③ ⊙ ⊗		Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>						
<b>INSPECTOR COMMENTS</b>								

# Post Construction BMP Policies/Procedures

## A-2: Bioretention Inspection Form

<b>Bioretention Inspection Form</b>				Inspector:	Cert ☐			
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert ☐			
				Date:				
Site ID: _____	Facility ID: _____	Facility Name: _____						
Address: _____		Coordinates / ParID: _____						
		Watershed: _____		District: _____				
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	①	High Priority / Non-functional				
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td><td style="width: 30px; height: 20px;"></td></tr></table>						②	Moderate Priority / Approaching Non-functional	
<b>1</b> <b>2</b> <b>3</b>			③	Low Priority / Functional				
			④	No Priority / Continue Routine Maintenance				
		⑤	Not Applicable					
Notes / Specifications:			Facility Specific Info:					
Facility Type / Addl Facility Info:								
Signs			Weather Conditions					
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	Last Rainfall	Date:	Amount:			
① ☐ ☐ ☐		Facility Sign		Data Source:				
③ ☐ ☐ ☐		Facility Labeling	Current weather conditions?					
Accessibility								
Access Comments:			<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>			
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner			
			Heavy Vegetation		Return for Re-inspection			
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>Stuck / Broken Cover</b>		<b>Request Photos from Owner</b>			
① ☐ ☐ ☐		Overall Facility Access	Equipment Needed: _____		Contact MSMD			
① ② ③ ④ ⑤		Component Access: _____	Other: _____		Other: _____			
Ponding Area								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>					
① ☐ ☐ ☐		Standing Water in Basin						
① ☐ ☐ ☐		Basin Area	Observed:	Specified:				
① ☐ ☐ ☐		Ponding Depth	Observed:	Specified:				
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
① ② ③ ④ ⑤		Mulch Cover (2-3" min.)						
① ② ③ ④ ⑤		Erosion / Bare Spots <i>Area:</i>						
① ② ③ ④ ⑤		Repair Filter Fabric						
① ② ③ ④ ⑤		Other: <i>Description:</i>						
<b>Plant Material</b>			<b>Plants in Inventory:</b>					
① ② ③ ④ ⑤		Trees Missing <i>(20% &lt; @ &lt; 40% &lt; @ &lt; 60% &lt; @)</i>	Observed:	Specified:	<b>Total % of Plant Material Coverage:</b>			
① ② ③ ④ ⑤		Shrubs Missing <i>(see above)</i>	Observed:	Specified:				
① ② ③ ④ ⑤		Groundcover Plants Missing <i>(see above)</i>	Observed:	Specified:				
① ② ③ ④ ⑤		Unhealthy / Damaged						
① ② ③ ④ ⑤		Overgrown / Invasive Vegetation						
① ② ③ ④ ⑤		Other: <i>Description:</i>						
<b>Observation Well / Cleanout(s)</b>								
① ☐ ☐ ☐		Missing / Not Found						
① ☐ ☐ ☐		Cap Missing / Stuck						
① ② ③ ④ ⑤		Water / Sediment Observed in Well?						
① ② ③ ④ ⑤		Vegetation / External Obstructions						
① ② ③ ④ ⑤		Damaged <i>Description:</i>						
① ② ③ ④ ⑤		Other: <i>Description:</i>						
Inflow(s)								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
		<b>Material / Size / Type:</b>						
① ② ③ ④ ⑤		Blockage <i>( @ &lt; 25% &lt; @ &lt; 75% &lt; @ )</i>						
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
① ② ③ ④ ⑤		Erosion / Undermining						
① ② ③ ④ ⑤		Spalling / Deterioration						
① ② ③ ④ ⑤		Separation / Misalignment						
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal						
① ② ③ ④ ⑤		Other: <i>Description:</i>						
Pre-Treatment / Energy Dissipators								
<b>Type(s):</b> Flow spreader / Forebay / Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Other: _____								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>					
① ☐ ☐ ☐		Missing / Non-Functional <i>Description:</i>						
① ☐ ☐ ☐		Inconsistent with Plans <i>(Area, Vertical Drop, etc.)</i>	Observed:	Specified:				
① ② ③ ④ ⑤		Damage / Deterioration <i>Description:</i>						
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
① ② ③ ④ ⑤		Other:						
Dam / Berm and Overflow Spillway								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>					
① ☐ ☐ ☐		Missing	Observed:	Specified:				
① ② ③ ④ ⑤		Slope Erosion <i>Area:</i>						
① ② ③ ④ ⑤		Bare Spots <i>Area:</i>						
① ② ③ ④ ⑤		Animal Holes						
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal						
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
① ② ③ ④ ⑤		Other: <i>Description:</i>						



# Post Construction BMP Policies/Procedures

Bioretention Inspection Form		Page 2		
Site ID: _____	Facility ID: _____	Facility Name: _____		
<b>Control Structure</b>				
Function:	Orifice Size:	Type (Circle): Riser Structure / Pipe End / Weir / Other: _____		
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①②③④⑤		Damage / Deterioration <i>Description:</i>		
①②③④⑤		Vegetation / External Obstructions		
①②③④⑤		Other: <i>Description:</i>		
<b>Low-Flow Orifice and Trash Rack</b>				
①	⊙ ⊗	Orifice Plate Missing / Non-Functional		
①	⊙ ⊗	Trash Rack Missing / Non-Functional		
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Damage / Deterioration <i>Description:</i>		
<b>Top Trash Rack and Anti-Vortex Plate</b>				
①	⊙ ⊗	Pad Lock Missing		
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Damage / Deterioration <i>Description:</i>		
<b>Riser Interior</b>				
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>		
①②③④⑤		Ladder / Steps Condition		
①②③④⑤		Manhole Condition		
<b>Underdrain(s) and Principal Spillway Pipe</b>				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>UNDERDRAIN(S)</b>	<b>PRINCIPAL SPILLWAY PIPE</b>
Specified on Approved Plans?				
①	⊙ ⊗	Missing		
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Spalling / Deterioration		
①②③④⑤		Separation / Misaligned Joints		
①②③④⑤		Other:		
<b>Outfall Structure</b>				
Material:	Size:	End Type:		
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Trash / Debris / Sediment		
①②③④⑤		Erosion / Undermining <i>Area:</i>		
①②③④⑤		Spalling / Deterioration		
①②③④⑤		Separation / Misalignment		
①②③④⑤		Overgrown Vegetation / Tree Removal		
①②③④⑤		Manhole Condition		
①②③④⑤		Ladder / Steps Condition		
①②③④⑤		Downstream Channel Condition		
①②③④⑤		Other:		
<b>Other</b>				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>	
①②③④⑤		Encroachments		
①②③④⑤		Modifications		
①②③④⑤		Mosquito Habitat		
①②③④⑤		Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>		
<b>INSPECTOR COMMENTS</b>				

Post Construction BMP Policies/Procedures

A-3: Cistern/Rain Barrel Inspection Form

Cistern / Rain Barrel Inspection Form				Inspector:	Cert <input type="radio"/>			
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert <input type="radio"/>			
				Date:				
Site ID: _____	Facility ID: _____	Facility Name: _____						
Address: _____		Coordinates / ParID: _____		Watershed: _____ District: _____				
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		Scoring Key	<input type="radio"/> ① High Priority / Non-functional <input type="radio"/> ② Moderate Priority / Approaching Non-functional <input type="radio"/> ③ Low Priority / Functional <input type="radio"/> ④ No Priority / Continue Routine Maintenance <input type="radio"/> ⑤ Not Applicable					
Score Totals: <input type="text" value="1"/> <input type="text" value="2"/> <input type="text" value="3"/>								
Notes / Specifications:			Facility Specific Info:					
Facility Type / Addl Facility Info:								
Signs			Weather Conditions					
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:			
① ② ③ ④ ⑤	<input type="checkbox"/>	Facility Sign						
① ② ③ ④ ⑤	<input type="checkbox"/>	Facility Labeling	Current weather conditions?					
Accessibility								
Access Comments:			ACCESS PROBLEMS (Circle)		NEXT STEP (Circle One)			
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner			
			Heavy Vegetation		Return for Re-inspection			
			Stuck / Broken Cover		Request Photos from Owner			
SCORE	PHOTO	DESCRIPTION	Equipment Needed: _____		Contact MSMD			
① ② ③ ④ ⑤	<input type="checkbox"/>	Overall Facility Access	Other: _____		Other: _____			
① ② ③ ④ ⑤	<input type="checkbox"/>	Component Access: _____	Other: _____		Other: _____			
Downspouts								
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
① ② ③ ④ ⑤	<input type="checkbox"/>	Disconnected						
① ② ③ ④ ⑤	<input type="checkbox"/>	Damaged / Leaking						
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage	( ① < 25% < ② < 75% < ③ )					
① ② ③ ④ ⑤	<input type="checkbox"/>	Other:	Description:					
Rainwater Harvesting System								
Type:	Cistern / Rain Barrel / Other: _____		Size:	Location: _____				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
① ② ③ ④ ⑤	<input type="checkbox"/>	Trees over Roof Surface						
① ② ③ ④ ⑤	<input type="checkbox"/>	Debris / Sediment in Gutter						
Pre-Treatment Device								
Type: _____								
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing / Non-Functional						
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration						
① ② ③ ④ ⑤	<input type="checkbox"/>	Trash / Debris / Sediment	Description / Amount:					
① ② ③ ④ ⑤	<input type="checkbox"/>	Other:	Description:					
Storage Tank								
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration						
① ② ③ ④ ⑤	<input type="checkbox"/>	Trash / Debris / Sediment	Description / Amount:					
① ② ③ ④ ⑤	<input type="checkbox"/>	Other:	Description:					
Overflow / Bypass								
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing / Non-Functional						
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage	( ① < 25% < ② < 75% < ③ )					
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration						
① ② ③ ④ ⑤	<input type="checkbox"/>	Other:	Description:					
Discharge / Water Use								
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing / Non-Functional						
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration						
① ② ③ ④ ⑤	<input type="checkbox"/>	Erosion	Area:					
① ② ③ ④ ⑤	<input type="checkbox"/>	Other:	Description:					
Other								
SCORE	PHOTO	DESCRIPTION	LOCATION					
① ② ③ ④ ⑤	<input type="checkbox"/>	Encroachments						
① ② ③ ④ ⑤	<input type="checkbox"/>	Modifications						
① ② ③ ④ ⑤	<input type="checkbox"/>	Mosquito Habitat						
① ② ③ ④ ⑤	<input type="checkbox"/>	Evidence of Possible Illicit Discharge						
<small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>								
INSPECTOR COMMENTS								

# Post Construction BMP Policies/Procedures

## A-4: Pond/Wetland Inspection Form

Pond / Wetland Inspection Form				Inspector: <input type="text"/> Cert <input type="radio"/>						
Fairfax County Maintenance and Stormwater Management Division				Inspector: <input type="text"/> Cert <input type="radio"/>						
				Date: <input type="text"/>						
Site ID: <input type="text"/>	Facility ID: <input type="text"/>	Facility Name: <input type="text"/>								
Address: <input type="text"/>		Coordinates / ParID: <input type="text"/>		District: <input type="text"/>						
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		Scoring Key	<input type="radio"/> ① High Priority / Non-functional <input type="radio"/> ② Moderate Priority / Approaching Non-functional <input type="radio"/> ③ Low Priority / Functional <input type="radio"/> ④ No Priority / Continue Routine Maintenance <input type="radio"/> ⑤ Not Applicable							
Score Totals: <input type="text"/> <input type="text"/> <input type="text"/>										
Notes / Specifications: <input type="text"/>			Facility Specific Info: <input type="text"/>							
Facility Type / Addl Facility Info: <input type="text"/>										
Signs			Weather Conditions							
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:					
<input type="radio"/> ① <input type="radio"/> ②	<input type="text"/>	Facility Sign		Data Source:						
<input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Facility Labeling	Current weather conditions? <input type="text"/>							
Accessibility										
Access Comments: <input type="text"/>			ACCESS PROBLEMS (Circle)		NEXT STEP (Circle One)					
New Access Comments for EAM: <input type="text"/>			Locked Gate / Fence		Coordinate with Owner					
			Heavy Vegetation		Return for Re-inspection					
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover		Request Photos from Owner					
<input type="radio"/> ① <input type="radio"/> ②	<input type="text"/>	Overall Facility Access	Equipment Needed: <input type="text"/>		Contact MSMD					
<input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Component Access: <input type="text"/>	Other: <input type="text"/>		Other: <input type="text"/>					
Control Structure										
Function:	Orifice Size:	Type (Circle): <input type="radio"/> Riser Structure / <input type="radio"/> Pipe End / <input type="radio"/> Weir / Other: <input type="text"/>								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS							
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Damage / Deterioration <small>Description:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Vegetation / External Obstructions								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Other: <small>Description:</small>								
Low-Flow Orifice and Trash Rack										
<input type="radio"/> ① <input type="radio"/> ②	<input type="text"/>	Orifice Plate Missing / Non-Functional								
<input type="radio"/> ① <input type="radio"/> ②	<input type="text"/>	Trash Rack Missing / Non-Functional								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Blockage* <small>(<math>\phi &lt; 25\% &lt; \phi &lt; 75\% &lt; \phi</math>)</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Damage / Deterioration <small>Description:</small>								
Top Trash Rack and Anti-Vortex Plate										
<input type="radio"/> ① <input type="radio"/> ②	<input type="text"/>	Pad Lock Missing								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Blockage* <small>(<math>\phi &lt; 25\% &lt; \phi &lt; 75\% &lt; \phi</math>)</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Damage / Deterioration <small>Description:</small>								
Riser Interior										
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Trash / Debris / Sediment <small>Description / Amount:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Ladder / Steps Condition								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Manhole Condition								
Principal Spillway Pipe, Upstream End										
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Blockage* <small>(<math>\phi &lt; 25\% &lt; \phi &lt; 75\% &lt; \phi</math>)</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Spalling / Deterioration								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Separation / Misaligned Joints*								
Dam / Berm and Emergency Spillway										
					Sep Auxiliary Spillway: <input type="text"/>					
SCORE	PHOTO	DESCRIPTION	FACE SLOPE		TOP OF DAM		BACK SLOPE		EMERG. SPILLWAY	
			Score	Comments	Score	Comments	Score	Comments	Material:	
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Toe Soft Spots*							Score	Comments
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Cave-In*								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Slope Erosion* <small>Area:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Bare Spots <small>Area:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Holes* <small>Location / Size:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Tree Removal <small>Num/Size:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Woody Vegetation								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Overgrown Non-woody Veg.								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Trash / Debris / Sediment								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Alterations: <small>Description:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Other: <small>Description:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Blockage at Emergency Spillway <small>(<math>\phi &lt; 25\% &lt; \phi &lt; 75\% &lt; \phi</math>)</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Damage / Deterioration at Emergency Spillway* <small>Description:</small>								
Outfall Structure / PSP Downstream End										
Material:		Size:	End Type:		Pipe Total:					
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS							
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Blockage* <small>(<math>\phi &lt; 25\% &lt; \phi &lt; 75\% &lt; \phi</math>)</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Trash / Debris / Sediment <small>Description / Amount:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Erosion / Undermining* <small>Area:</small>								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Spalling / Deterioration								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Separation / Misalignment*								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Overgrown Vegetation / Tree Removal								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Handrail Status								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Manhole Condition								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Ladder / Steps Condition								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Downstream Channel Condition								
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④	<input type="text"/>	Other:								

# Post Construction BMP Policies/Procedures

Pond / Wetland Inspection Form		Page 2												
Site ID: _____		Facility ID: _____			Facility Name: _____									
Pond Floor / Pool														
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS											
①	☐	Water Level Inconsistent with Plans												
①②③④	☐	Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④	☐	Overgrown Vegetation												
①②③④	☐	Tree Removal <small>Number / Size:</small>												
①②③④	☐	Erosion / Bare Spots <small>Area:</small>												
①②③④	☐	Other: <small>Description:</small>												
Trickle Ditch / Low Flow Channel		Shown on Plans: Yes / No			Ditch Material:			Ditch Total:						
①	☐	Not Found / Completely Covered												
①②③④	☐	Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④	☐	Blockage <small>(∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅)</small>												
①②③④	☐	Erosion / Trenching / Roots <small>Description:</small>												
①②③④	☐	Detoured Flow Line <small>Description:</small>												
①②③④	☐	Damage / Deterioration <small>Description:</small>												
①②③④	☐	Other: <small>Description:</small>												
Sediment Forebay and Micropools		1	2	3	4	5	6							
Type of Pond Cell (Forebay, Micropool, Wetland Cell, etc.)														
①	☐	Inconsistent with Plans												
①②③④	☐	Erosion / Bare Spots <small>Area:</small>												
①②③④	☐	Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④	☐	Overgrown Vegetation												
①②③④	☐	Tree Removal <small>Number / Size:</small>												
①②③④	☐	Displaced Rip Rap												
①②③④	☐	Weir Condition <small>Type:</small>												
①②③④	☐	Other: <small>Description:</small>												
Wetland Habitat		Signs Posted: Yes / No		Plants in Inventory:										
Type of Wetland (Emergent/Forested)														
①②③④	☐	Unhealthy / Damaged												
①②③④	☐	Overgrown Vegetation / Tree Removal												
①②③④	☐	Submergent Vegetation	Observed:		Specified:									
①②③④	☐	Emergent Vegetation	Observed:		Specified:									
①②③④	☐	Undesired Vegetation*	<small>(Cattails / Phragmites / Trapa, estimate % of pond cover)</small>											
①	☐	Inconsistent with Plans												
①②③④	☐	Posted Sign Condition												
①②③④	☐	Other: <small>Description:</small>												
Upstream Inflow(s)														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
		End Type / Overland:												
		Pipe Material:												
		Pipe Size:												
①②③④	☐	Blockage <small>(∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅)</small>												
①②③④	☐	Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④	☐	Erosion / Undermining <small>Area:</small>												
①②③④	☐	Spalling / Deterioration												
①②③④	☐	Separation / Misalignment												
①②③④	☐	Overgrown Vegetation / Tree Removal												
①②③④	☐	Handrail Status												
①②③④	☐	Downstream Channel Condition												
①②③④	☐	Other:												
Other														
SCORE	PHOTO	DESCRIPTION	LOCATION											
①②③④	☐	Encroachments												
①②③④	☐	Modifications												
①②③④	☐	Mosquito Habitat												
①②③④	☐	Evidence of Possible Illicit Discharge <small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>												
<b>INSPECTOR COMMENTS</b>														
<small>Asterisked items for publicly maintained facility may require early review as critical infrastructure problems. If any of these components are noted at condition "1" (or in combination/sequence represent a need for immediate attention) early county notification is requested.</small>														

# Post Construction BMP Policies/Procedures

## A-5: Green Roof Inspection Form

<b>Green Roof Inspection Form</b>				Inspector: _____ Cert <input type="radio"/>										
<small>Fairfax County Maintenance and Stormwater Management Division</small>				Inspector: _____ Cert <input type="radio"/>										
				Date: _____										
Site ID: _____	Facility ID: _____	Facility Name: _____												
Address: _____		Coordinates / ParID: _____		Watershed: _____ District: _____										
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	<input type="radio"/> 1	High Priority / Non-functional										
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3	<input type="radio"/> 2	Moderate Priority / Approaching Non-functional							
1	2		3											
			<input type="radio"/> 3	Low Priority / Functional										
		<input type="radio"/> 4	No Priority / Continue Routine Maintenance											
		<input type="radio"/> 5	Not Applicable											
Notes / Specifications:			Facility Specific Info:											
Facility Type / Add Facility Info:														
Signs			Weather Conditions											
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:									
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="checkbox"/>	Facility Sign		Data Source:										
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="checkbox"/>	Facility Labeling	Current weather conditions?											
Accessibility														
Access Comments:			<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>									
New Access Comments for EAM:			Locked Access Door		Coordinate with Owner									
			Broken / Unsafe Ladder		Return for Re-inspection									
SCORE	PHOTO	DESCRIPTION	Too Tall for Standard Ladder		Request Photos from Owner									
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="checkbox"/>	Overall Facility Access	Equipment Needed: _____		Contact MSMD									
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Component Access: _____	Other: _____		Roofing Contractor/ Bucket Truck									
Roof Surface														
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS											
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="checkbox"/>	Change in Roof Design	Observed: _____	Specified: _____										
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Visible Damage to Surface												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Erosion / Bare Spots <span style="float: right;">Area: _____</span>												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Trash / Debris / Sediment <span style="float: right;">Description / Amount: _____</span>												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Ponding Water (after dry weather) <span style="float: right;">Area: _____</span>												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Access Path	Observed: _____	Specified: _____										
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Aluminum Curbing	Observed: _____	Specified: _____										
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Other: _____ <span style="float: right;">Description: _____</span>												
Plant Material			Plants in Inventory:											
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Trees Missing <span style="float: right;">(20% &lt; @ &lt; 40% &lt; @ &lt; 60% &lt; @)</span>	Observed: _____	Specified: _____	Total % of Plant Material Coverage: _____									
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Shrubs Missing <span style="float: right;">(see above)</span>	Observed: _____	Specified: _____										
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Groundcover Plants Missing <span style="float: right;">(see above)</span>	Observed: _____	Specified: _____										
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Unhealthy / Damaged												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Overgrown / Invasive Vegetation												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Other: _____ <span style="float: right;">Description: _____</span>												
		For Multi-Level Rooftop Detention Systems, Describe Stormwater Flow:	Notes: _____											
Roof Drains														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="checkbox"/>	Debris Cage Missing												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Blockage <span style="float: right;">(@ &lt; 25% &lt; @ &lt; 75% &lt; @)</span>												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Damage / Deterioration												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Vegetation / External Obstructions												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Other: _____ <span style="float: right;">Description: _____</span>												
Scupper Ports / Emergency Overflow														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Blockage <span style="float: right;">(@ &lt; 25% &lt; @ &lt; 75% &lt; @)</span>												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Damage / Deterioration												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Vegetation / External Obstructions												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Other: _____ <span style="float: right;">Description: _____</span>												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="checkbox"/>	Insufficient Emergency Overflow	Observed: _____			Specified: _____								
Other														
SCORE	PHOTO	DESCRIPTION	LOCATION											
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Encroachments												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Modifications												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Mosquito Habitat												
<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="checkbox"/>	Evidence of Possible Illicit Discharge <small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>												
<b>INSPECTOR COMMENTS</b>														

Post Construction BMP Policies/Procedures

A-6: Manufactured BMP Inspection Form

<b>Manufactured BMP Inspection Form</b>				Inspector: <input type="text" value="Cert"/>
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector: <input type="text" value="Cert"/>
				Date: <input type="text"/>
Site ID: <input type="text"/>	Facility ID: <input type="text"/>	Facility Name: <input type="text"/>		
Address: <input type="text"/>		Coordinates / ParID: <input type="text"/>	District: <input type="text"/>	
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	<input type="radio"/> ①	High Priority / Non-functional
			<input type="radio"/> ②	Moderate Priority / Approaching Non-functional
			<input type="radio"/> ③	Low Priority / Functional
			<input type="radio"/> ④	No Priority / Continue Routine Maintenance
			<input type="radio"/> ⑤	Not Applicable
Score Totals: <input type="text" value="1"/> <input type="text" value="2"/> <input type="text" value="3"/>		Notes / Specifications: <input type="text"/>		
Facility Specific Info: <input type="text"/>				
<b>Facility Type / Addl Facility Info:</b>				
<b>Signs</b>			<b>Weather Conditions</b>	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	Last Rainfall	Date: <input type="text"/> Amount: <input type="text"/>
<input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Facility Sign		Data Source: <input type="text"/>
<input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Facility Labeling	Current weather conditions? <input type="text"/>	
<b>Accessibility</b>				
Access Comments: <input type="text"/>		<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>
New Access Comments for EAM: <input type="text"/>		Locked Gate / Fence		Coordinate with Owner
		Parked Cars		Return for Re-inspection
		Stuck / Broken Cover		Request Photos from Owner
		Equipment Needed: <input type="text"/>		Contact MSMD
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>Other:</b> <input type="text"/>	
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Overall Facility Access		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Component Access:	<b>Other:</b> <input type="text"/>	
<b>Maintenance Records</b>				
<b>YES / NO</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS</b>	
<input type="radio"/> YES <input type="radio"/> NO	<input type="text"/>	Inspection / Maintenance Conducted Recently		
<input type="radio"/> YES <input type="radio"/> NO	<input type="text"/>	Maintenance Records Available On-Site		
<b>Manufacturer-Specific Items</b>				
<i>Look for these items as you inspect each chamber of the Manufactured BMP facility.</i>				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
<b>Cartridge-Type Filters</b> <i>including BayFilter, Jellyfish, and StormFilter</i>				
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Number of Cartridges Inconsistent with Plans	# Observed: <input type="text"/>	# Specified: <input type="text"/>
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Cartridge Condition <i>Description:</i> <input type="text"/>		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Bypass Weir or StormGate	<i>(Inspect the StormGate structure as it's own "Chamber" below.)</i>	
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Flow Spreader / Dissipator		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Trash Separator Condition		
<b>Hydrodynamic Separators</b> <i>including Barracuda, CDS, Downstream Defender, SciCLONE, Stormceptor, and Vortechs</i>				
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Swirl Chamber / Fiberglass Insert / Cylindrical Baffle		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Orifice Plate(s)		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Weir(s)		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Inspection Port		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Safety Grate		
<b>Oil/Grit Separators</b> <i>including classic non-proprietary oil/grit separators and Baysaver / BaySeparator units</i>				
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	CMP Elbow Condition		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Trash Rack Condition		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Tee Pipes		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Bypass Plate		
<i>Inspect Chambers from Upstream to Downstream, Providing Identifying Information for Each</i>				
<b>Chamber 1</b>				
Chamber Name: <input type="text"/>		Structure #: <input type="text"/>	Sketch Label: <input type="text"/>	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Inconsistent with Plans	Observed: <input type="text"/>	Specified: <input type="text"/>
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Trash / Debris / Sediment <i>Description / Amount:</i> <input type="text"/>		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Blockage <i>(Full of water after dry weather, no permanent pool on plans.)</i>		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Spalling / Deterioration		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Connecting Pipes, if any	Pipe Direction: <input type="text"/>	Problem: <input type="text"/>
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Manhole / Bilco Door Condition		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Ladder / Steps Condition		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Other: <input type="text"/>		
<b>Chamber 2</b>				
Chamber Name: <input type="text"/>		Structure #: <input type="text"/>	Sketch Label: <input type="text"/>	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Inconsistent with Plans	Observed: <input type="text"/>	Specified: <input type="text"/>
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Trash / Debris / Sediment <i>Description / Amount:</i> <input type="text"/>		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Blockage <i>(Full of water after dry weather, no permanent pool on plans.)</i>		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Spalling / Deterioration		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Connecting Pipes, if any	Pipe Direction: <input type="text"/>	Problem: <input type="text"/>
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Manhole / Bilco Door Condition		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Ladder / Steps Condition		
<input type="radio"/> ① <input type="radio"/> ② <input type="radio"/> ③ <input type="radio"/> ④ <input type="radio"/> ⑤	<input type="text"/>	Other: <input type="text"/>		



# Post Construction BMP Policies/Procedures

Manufactured BMP Inspection Form				Page 2
Site ID: _____	Facility ID: _____	Facility Name: _____		
<b>Chamber 3</b>				
Chamber Name:		Structure #:	Sketch Label:	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①	⊙	Inconsistent with Plans	Observed:	Specified:
①②③④	⊙	Trash / Debris / Sediment <i>Description / Amount:</i>		
①②③④	⊙	Blockage <i>(Full of water after dry weather, no permanent pool on plans.)</i>		
①②③④	⊙	Spalling / Deterioration		
①②③④	⊙	Connecting Pipes, if any	Pipe Direction:	Problem:
①②③④	⊙	Manhole / Bilco Door Condition		
①②③④	⊙	Ladder / Steps Condition		
①②③④	⊙	Other:		
<b>Chamber 4</b>				
Chamber Name:		Structure #:	Sketch Label:	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①	⊙	Inconsistent with Plans	Observed:	Specified:
①②③④	⊙	Trash / Debris / Sediment <i>Description / Amount:</i>		
①②③④	⊙	Blockage <i>(Full of water after dry weather, no permanent pool on plans.)</i>		
①②③④	⊙	Spalling / Deterioration		
①②③④	⊙	Connecting Pipes, if any	Pipe Direction:	Problem:
①②③④	⊙	Manhole / Bilco Door Condition		
①②③④	⊙	Ladder / Steps Condition		
①②③④	⊙	Other:		
<b>Chamber 5</b>				
Chamber Name:		Structure #:	Sketch Label:	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①	⊙	Inconsistent with Plans	Observed:	Specified:
①②③④	⊙	Trash / Debris / Sediment <i>Description / Amount:</i>		
①②③④	⊙	Blockage <i>(Full of water after dry weather, no permanent pool on plans.)</i>		
①②③④	⊙	Spalling / Deterioration		
①②③④	⊙	Connecting Pipes, if any	Pipe Direction:	Problem:
①②③④	⊙	Manhole / Bilco Door Condition		
①②③④	⊙	Ladder / Steps Condition		
①②③④	⊙	Other:		
<b>Outfall Structure / Other</b>				
<b>Outfall Structure</b>				
Material:	Size:	End Type:	Structure # on Plans:	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①②③④	⊙	Blockage <i>( ⊙ &lt; 25% &lt; ⊙ &lt; 75% &lt; ⊙ )</i>		
①②③④	⊙	Trash / Debris / Sediment		
①②③④	⊙	Erosion / Undermining <i>Area:</i>		
①②③④	⊙	Spalling / Deterioration		
①②③④	⊙	Separation / Misalignment		
①②③④	⊙	Overgrown Vegetation / Tree Removal		
①②③④	⊙	Manhole Condition		
①②③④	⊙	Ladder / Steps Condition		
①②③④	⊙	Downstream Channel Condition		
①②③④	⊙	Other:		
<b>Other</b>				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>	
①②③④	⊙	Encroachments		
①②③④	⊙	Modifications		
①②③④	⊙	Mosquito Habitat		
①②③④	⊙	Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>		
<b>INSPECTOR COMMENTS</b>				

# Post Construction BMP Policies/Procedures

## A-7: Parking Lot Detention Inspection Form

Parking Lot Detention Inspection Form				Inspector: _____ Cert <input type="radio"/>	
Fairfax County Maintenance and Stormwater Management Division				Inspector: _____ Cert <input type="radio"/>	
Site ID: _____		Facility ID: _____		Date: _____	
Address: _____		Facility Name: _____			
		Coordinates / ParID : _____			
		Watershed: _____ District: _____			
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b> ① High Priority / Non-functional ② Moderate Priority / Approaching Non-functional ③ Low Priority / Functional ④ No Priority / Continue Routine Maintenance ⑤ Not Applicable			
Score Totals: <input type="text"/> <input type="text"/> <input type="text"/>					
1                      2                      3					
Notes / Specifications: _____		Facility Specific Info: _____			
Facility Type / Add Facility Info: _____					
Signs			Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:
③ ② ①		Facility Sign			
③ ② ①		Facility Labeling	Current weather conditions? _____		
Accessibility					
Access Comments:		ACCESS PROBLEMS (Circle)		NEXT STEP (Circle One)	
New Access Comments for EAM:		Locked Gate / Fence		Coordinate with Owner	
		Parked Cars		Return for Re-inspection	
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover		Request Photos from Owner
① ② ③ ④ ⑤		Overall Facility Access	Equipment Needed: _____		Contact MSMD
① ② ③ ④ ⑤		Component Access: _____	Other: _____		Other: _____
Control Structure					
		Orifice Size: _____	Emergency Overflow Provided? Yes / No		
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS		
① ② ③ ④ ⑤		Blockage ( ① < 25% < ② < 75% < ③ )			
① ② ③ ④ ⑤		Damaged			
① ② ③ ④ ⑤		Spalling / Deterioration			
① ② ③ ④ ⑤		Overgrown Vegetation / External Obstruction			
① ② ③ ④ ⑤		Other: _____			
		Restrictor Plate / Trash Rack			
① ② ③ ④ ⑤		Restrictor Plate Missing	Observed: _____	Specified: _____	
① ② ③ ④ ⑤		Trash Rack Missing	Observed: _____	Specified: _____	
① ② ③ ④ ⑤		Damage / Deterioration			
① ② ③ ④ ⑤		Other: _____			
Structure Interior					
① ② ③ ④ ⑤		Trash / Debris / Sediment (interior) _____	Description / Amount:		
① ② ③ ④ ⑤		Manhole Condition			
① ② ③ ④ ⑤		Ladder / Steps Condition			
Outlet Pipe					
① ② ③ ④ ⑤		Blockage ( ① < 25% < ② < 75% < ③ )			
① ② ③ ④ ⑤		Spalling / Deterioration			
① ② ③ ④ ⑤		Separation / Misalignment			
① ② ③ ④ ⑤		Other: _____	Description:		
Parking Lot Surface					
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS		
① ② ③ ④ ⑤		Ponding Water (after dry weather)			
① ② ③ ④ ⑤		Trash / Debris / Sediment _____	Description / Amount:		
① ② ③ ④ ⑤		Asphalt / Concrete Condition			
① ② ③ ④ ⑤		Other: _____	Description:		
Outfall Structure					
Material: _____		Size: _____	End Type: _____		
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS		
① ② ③ ④ ⑤		Blockage ( ① < 25% < ② < 75% < ③ )			
① ② ③ ④ ⑤		Trash / Debris / Sediment			
① ② ③ ④ ⑤		Erosion / Undermining _____	Area:		
① ② ③ ④ ⑤		Spalling / Deterioration			
① ② ③ ④ ⑤		Separation / Misalignment			
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal			
① ② ③ ④ ⑤		Manhole Condition			
① ② ③ ④ ⑤		Ladder / Steps Condition			
① ② ③ ④ ⑤		Downstream Channel Condition			
① ② ③ ④ ⑤		Other: _____			
Other					
SCORE	PHOTO	DESCRIPTION	LOCATION		
① ② ③ ④ ⑤		Encroachments			
① ② ③ ④ ⑤		Modifications			
① ② ③ ④ ⑤		Mosquito Habitat			
① ② ③ ④ ⑤		Evidence of Possible Illicit Discharge			
(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a> )					
INSPECTOR COMMENTS					

# Post Construction BMP Policies/Procedures

## A-8: Permeable Pavement Inspection Form

<b>Permeable Pavement Inspection Form</b>				Inspector: <input type="text"/> Cert <input type="radio"/>										
Pervious Pavement, Porous Pavers, and Synthetic Turf				Inspector: <input type="text"/> Cert <input type="radio"/>										
Fairfax County Maintenance and Stormwater Management Division				Date: <input type="text"/>										
Site ID: <input type="text"/>		Facility ID: <input type="text"/>		Facility Name: <input type="text"/>										
Address: <input type="text"/>				Coordinates / ParID: <input type="text"/>										
				Watershed: <input type="text"/> District: <input type="text"/>										
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	① High Priority / Non-functional											
Score Totals: <input type="text"/>			② Moderate Priority / Approaching Non-functional											
1      2      3			③ Low Priority / Functional											
			④ No Priority / Continue Routine Maintenance											
		⑤ Not Applicable												
Notes / Specifications: <input style="width: 80%;" type="text"/>		Facility Specific Info: <input style="width: 80%;" type="text"/>												
Facility Type / Addl Facility Info: <input style="width: 100%;" type="text"/>														
Signs			Weather Conditions											
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:									
①②③④		Facility Sign												
①②③④		Facility Labeling	Current weather conditions?											
Accessibility														
Access Comments:		<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>										
New Access Comments for EAM: <input style="width: 80%;" type="text"/>		Locked Gate / Fence		Coordinate with Owner										
		Stuck / Broken Cover		Return for Re-inspection										
SCORE	PHOTO	DESCRIPTION	Equipment Needed: <input type="text"/>		Request Photos from Owner									
①	④	Overall Facility Access	Other: <input type="text"/>		Contact MSMD									
①②③④		Component Access: <input type="text"/>	Other: <input type="text"/>		Other: <input type="text"/>									
Parking Lot														
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS											
①②③④⑤		Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④⑤		Asphalt / Concrete Condition												
①②③④⑤		Other: <small>Description:</small>												
Permeable Pavement Surface														
SCORE	PHOTO	DESCRIPTION	Infiltration:	Underdrain:										
①	④	Ponding Water (after dry weather)	COMMENTS / DIMENSIONS											
①②③④⑤		Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④⑤		Vegetation												
①②③④⑤		Pavement Functionality (Infiltration)	<small>Test infiltration of system with 5-gallon bucket of water.</small>											
①②③④⑤		Surface Damage (Cracking / Settlement)												
①②③④⑤		Broken or Missing Pavers												
①②③④⑤		Tree Dripline Over Pavement												
①②③④⑤		Evidence of Sand/Salt Application												
①②③④⑤		Other: <small>Description:</small>												
Synthetic Turf Surface														
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS											
①	④	Ponding Water (after dry weather)												
①②③④⑤		Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④⑤		Surface Damage												
①②③④⑤		Condition of Synthetic Turf												
①②③④⑤		Other: <small>Description:</small>												
Observation Well / Cleanout(s)														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
①	④	Missing												
①	④	Cap Missing / Stuck												
①	④	Water / Sediment Observed in Well												
①②③④⑤		Blockage <small>(① &lt; 25% &lt; ② &lt; 75% &lt; ③)</small>												
①②③④⑤		Damaged												
①②③④⑤		Other: <small>Description:</small>												
Emergency Overflow / Outfall Structure														
SCORE	PHOTO	DESCRIPTION	Emergency Overflow Provided? Yes / No		COMMENTS / DIMENSIONS									
①②③④⑤		Blockage <small>(① &lt; 25% &lt; ② &lt; 75% &lt; ③)</small>												
①②③④⑤		Trash / Debris / Sediment <small>Description / Amount:</small>												
①②③④⑤		Damage / Deterioration												
①②③④⑤		Overgrown Vegetation / External Obstruction												
①②③④⑤		Manhole Condition												
①②③④⑤		Ladder / Steps Condition												
①②③④⑤		Downstream Pipe Condition												
①②③④⑤		Other: <small>Description:</small>												
Underdrain Pipe		Required by Plans?	Yes / No											
①	④	Missing / Not Found												
①	④	Flow-Reduction Orifice Missing (if required)												
①②③④⑤		Blockage <small>(① &lt; 25% &lt; ② &lt; 75% &lt; ③)</small>												
①②③④⑤		Damage / Deterioration												
①②③④⑤		Other: <small>Description:</small>												

Permeable Pavement Inspection Form			Page 2
Site ID: _____	Facility ID: _____	Facility Name: _____	
<b>Other</b>			
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>
①②③④⑤		Encroachments	
①②③④⑤		Modifications	
①②③④⑤		Mosquito Habitat	
①②③④⑤		Evidence of Possible Illicit Discharge <small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>	
<b>INSPECTOR COMMENTS</b>			

Post Construction BMP Policies/Procedures

A-9: Rooftop Disconnection Inspection Form

<b>Rooftop Disconnection Inspection Form</b>				Inspector: _____ Cert <input type="radio"/>		
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector: _____ Cert <input type="radio"/>		
Site ID: _____		Facility ID: _____		Date: _____		
Facility Name: _____		Coordinates / ParlD : _____		District: _____		
Address: _____		Watershed: _____		District: _____		
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	①	High Priority / Non-functional		
Score Totals: <input type="text"/> <input type="text"/> <input type="text"/>			②	Moderate Priority / Approaching Non-functional		
<b>1</b> <b>2</b> <b>3</b>			③	Low Priority / Functional		
			④	No Priority / Continue Routine Maintenance		
			⑤	Not Applicable		
Notes / Specifications:			Facility Specific Info:			
Facility Type / Addl Facility Info:						
Signs			Weather Conditions			
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	Last Rainfall	Date:	Amount:	
③④⑤		Facility Sign		Data Source:		
③④⑤		Facility Labeling	Current weather conditions?			
Accessibility						
Access Comments:			<b>ACCESS PROBLEMS (Circle One)</b>		<b>NEXT STEP (Circle One)</b>	
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner	
			Heavy Vegetation		Return for Re-inspection	
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	Other: _____		Request Photos from Owner	
①	④⑤	Overall Facility Access			Contact MSMD	
①②③④⑤		Component Access: _____			Other: _____	
Rooftop Disconnection						
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>1</b>	<b>2</b>	<b>3</b>	
			<b>4</b>	<b>5</b>	<b>6</b>	
<b>Downspouts</b>						
①	④⑤	Not Disconnected				
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>				
①②③④⑤		Blockage <i>( ① &lt; 25% &lt; ② &lt; 75% &lt; ③ )</i>				
①②③④⑤		Damaged <i>Description:</i>				
①②③④⑤		Outflow Obstruction <i>Description:</i>				
①②③④⑤		Other: <i>Description:</i>				
<b>Downstream Treatment / Receiving Area</b> <i>Type:</i>						
①	④⑤	Functioning as Designed				
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>				
①②③④⑤		Erosion / Bare Spots <i>Area:</i>				
①②③④⑤		Other: <i>Description:</i>				
Total Number of Downspouts			Observed:	Specified:		
Total Number of Disconnected Downspouts			Observed:	Specified:		
Other						
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>			
①②③④⑤		Encroachments				
①②③④⑤		Modifications				
①②③④⑤		Mosquito Habitat				
①②③④⑤		Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>				
<b>INSPECTOR COMMENTS</b>						

Post Construction BMP Policies/Procedures

A-10: Reforestation/Floating Treatment Wetland Inspection Form

Reforestation / Floating Treatment Wetland Inspection Form				Inspector:	Cert <input type="radio"/>			
Fairfax County Maintenance and Stormwater Management Division				Inspector:	Cert <input type="radio"/>			
				Date:				
Site ID: _____	Facility ID: _____	Facility Name: _____						
Address: _____		Coordinates / ParID: _____		District: _____				
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No			Scoring Key	①	High Priority / Non-functional			
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>				1	2	3	②	Moderate Priority / Approaching Non-functional
1	2	3						
				③	Low Priority / Functional			
				⊖	No Priority / Continue Routine Maintenance			
			⊗	Not Applicable				
Notes / Specifications: _____			Facility Specific Info: _____					
Facility Type / Addl Facility Info: _____								
Signs			Weather Conditions					
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:			
③⊖⊗		Facility Sign						
③⊖⊗		Facility Labeling	Current weather conditions?					
Accessibility								
Access Comments:			ACCESS PROBLEMS (Circle)		NEXT STEP (Circle One)			
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner			
			Other: _____		Return for Re-inspection			
SCORE	PHOTO	DESCRIPTION	Request Photos from Owner					
① ⊖⊗		Overall Facility Access	Contact MSMD					
①②③⊖⊗		Component Access: _____	Other: _____					
Reforestation / Floating Treatment Wetland Area								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
① ⊖⊗		Reforestation	Observed:		Specified:			
① ⊖⊗		Floating Treatment Wetland Placement	Scoring should be based on the location of the raft per approved plan					
①②③⊖⊗		Trash / Debris / Sediment	Description / Amount:					
①②③⊖⊗		Erosion / Bare Spots	Area:					
Plant Material								
①②③⊖⊗		Trees Missing (20% < ⊖ < 40% < ⊖ < 60% < ⊖)	Plants in Inventory: Observed:		Total % of Plant Material Coverage:			
①②③⊖⊗		Shrubs Missing (see above)	Observed:					
①②③⊖⊗		Groundcover Plants Missing	Observed:					
FTW: See plans. RF: No mowing. Reforestation areas should convert naturally to forest.								
①②③⊖⊗		Unhealthy / Damaged						
①②③⊖⊗		Unauthorized Planting						
①②③⊖⊗		Overgrown / Invasive Vegetation	FTW: Large trees can damage floating wetland islands. RF: Identify invasives. Reforestation areas convert naturally to forest.					
①②③⊖⊗		Other: _____	Description:					
Other								
SCORE	PHOTO	DESCRIPTION	LOCATION					
①②③⊖⊗		Encroachments						
①②③⊖⊗		Modifications						
①②③⊖⊗		Mosquito Habitat						
①②③⊖⊗		Evidence of Possible Illicit Discharge	(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a> )					
<b>INSPECTOR COMMENTS</b>								



# Post Construction BMP Policies/Procedures

## A-11: Rooftop Detention Inspection Form

<b>Rooftop Detention Inspection Form</b>				Inspector:	Cert <input type="radio"/>									
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert <input type="radio"/>									
				Date:										
Site ID: _____	Facility ID: _____	Facility Name: _____												
Address: _____		Coordinates / ParID : _____												
		Watershed: _____	District: _____											
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	①	High Priority / Non-functional										
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3	②	Moderate Priority / Approaching Non-functional							
1	2		3											
			③	Low Priority / Functional										
			④	No Priority / Continue Routine Maintenance										
		⑤	Not Applicable											
Notes / Specifications:			Facility Specific Info:											
Facility Type / Addl Facility Info:														
Signs			Weather Conditions											
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:									
③ ④ ⑤	<input type="checkbox"/>	Facility Sign												
③ ④ ⑤	<input type="checkbox"/>	Facility Labeling	Current weather conditions?											
Accessibility														
Access Comments:			<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>									
New Access Comments for EAM:			Locked Access Door		Coordinate with Owner									
			Broken / Unsafe Ladder		Return for Re-inspection									
SCORE	PHOTO	DESCRIPTION	Too Tall for Standard Ladder		Request Photos from Owner									
①	<input type="checkbox"/>	Overall Facility Access	Equipment Needed: _____		Contact MSMD									
① ② ③ ④ ⑤	<input type="checkbox"/>	Component Access:	Other:		Roofing Contractor/ Bucket Truck									
Roof Surface														
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS											
①	<input type="checkbox"/>	Change in Roof Design	Observed:	Specified:										
① ② ③ ④ ⑤	<input type="checkbox"/>	Visible Damage to Surface												
① ② ③ ④ ⑤	<input type="checkbox"/>	Trash / Debris / Sediment <i>Description / Amount:</i>												
① ② ③ ④ ⑤	<input type="checkbox"/>	Ponding Water (after dry weather) <i>Area:</i>												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
Parapet Wall														
①	<input type="checkbox"/>	Missing												
① ② ③ ④ ⑤	<input type="checkbox"/>	Damaged <i>Description:</i>												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
For Multi-Level Rooftop Detention Systems, Describe Stormwater Flow:			Notes:											
Roof Drains and Detention Devices														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
	<input type="checkbox"/>	Detention Device <i>Type:</i>												
	<input type="checkbox"/>	<i>Opening Size:</i>												
	<input type="checkbox"/>	<i>No. of Openings:</i>												
	<input type="checkbox"/>	<i>Adjustable Device Setting:</i>												
①	<input type="checkbox"/>	Missing												
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )												
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration												
① ② ③ ④ ⑤	<input type="checkbox"/>	Unapproved Alteration / Setting												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
Debris Cage														
①	<input type="checkbox"/>	Missing												
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )												
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
Roof Drain Pipe														
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )												
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
Detention Summary			Number of Roof Drains:		Observed:	Specified:								
			Number of Detention Devices:		Observed:	Specified:								
<i>(may be completed in office)</i>			Total Area of Openings, < 3" Height:		Observed:	Specified:								
①	<input type="checkbox"/>	Insufficient Detention												
Scupper Ports / Emergency Overflow														
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12
①	<input type="checkbox"/>	< 3" Above Roof Surface												
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )												
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
Detention Devices at Scuppers (When Applicable)														
①	<input type="checkbox"/>	Missing												
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )												
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration												
① ② ③ ④ ⑤	<input type="checkbox"/>	Unapproved Alteration												
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: <i>Description:</i>												
Emergency Overflow Summary			Number of Scuppers:		Observed:	Specified:								
①	<input type="checkbox"/>	Insufficient Emergency Overflow												

## Post Construction BMP Policies/Procedures

Roof Top Detention Inspection Form		Page 2	
Site ID: _____		Facility ID: _____ Facility Name: _____	
Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③④⑤		Encroachments	
①②③④⑤		Modifications	
①②③④⑤		Mosquito Habitat	
①②③④⑤		Evidence of Possible Illicit Discharge <i>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</i>	
<b>INSPECTOR COMMENTS</b>			

# Post Construction BMP Policies/Procedures

## A-12: Sand Filter Inspection Form

<b>Sand Filter Inspection Form</b>				Inspector:	Cert <input type="radio"/>				
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert <input type="radio"/>				
				Date:					
Site ID: _____	Facility ID: _____	Facility Name: _____							
Address: _____		Coordinates / ParID: _____		Watershed: _____ District: _____					
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	①	High Priority / Non-functional					
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3	②	Moderate Priority / Approaching Non-functional		
1	2		3						
			③	Low Priority / Functional					
			④	No Priority / Continue Routine Maintenance					
		⑤	Not Applicable						
Notes / Specifications:			Facility Specific Info:						
Facility Type / Addl Facility Info:									
Signs			Weather Conditions						
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:				
① ② ③ ④ ⑤		Facility Sign		Data Source:					
① ② ③ ④ ⑤		Facility Labeling	Current weather conditions?						
Accessibility									
Access Comments:			<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>				
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner				
			Parked Cars		Return for Re-inspection				
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover		Request Photos from Owner				
① ② ③ ④ ⑤		Overall Facility Access	Equipment Needed: _____		Contact MSMD				
① ② ③ ④ ⑤		Component Access:	Other: _____		Other: _____				
Maintenance Records									
YES / NO	PHOTO	DESCRIPTION	COMMENTS						
YES / NO		Inspection / Maintenance Conducted Recently							
YES / NO		Maintenance Records Available On-Site							
D.C. / Delaware Sand Filter									
Sediment Chamber									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
① ② ③ ④ ⑤		Water Level Too Low							
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>							
① ② ③ ④ ⑤		Spalling / Deterioration							
① ② ③ ④ ⑤		Manhole / Bilco Door Condition							
① ② ③ ④ ⑤		Ladder / Steps Condition							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Bypass Pipe / Overflow Weir									
① ② ③ ④ ⑤		Missing							
① ② ③ ④ ⑤		Blockage <i>( @ &lt; 25% &lt; @ &lt; 75% &lt; @ )</i>							
① ② ③ ④ ⑤		Damage / Deterioration							
Inflows									
① ② ③ ④ ⑤		Spalling / Deterioration							
① ② ③ ④ ⑤		Separation / Misalignment							
① ② ③ ④ ⑤		Blockage <i>( @ &lt; 25% &lt; @ &lt; 75% &lt; @ )</i>							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Filter Chamber									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
① ② ③ ④ ⑤		Ponding Water (after dry weather) <i>Area:</i>							
① ② ③ ④ ⑤		Spalling / Deterioration							
① ② ③ ④ ⑤		Cleanout(s) Condition							
① ② ③ ④ ⑤		Emergency Overflow <i>Type:</i>							
① ② ③ ④ ⑤		Manhole / Bilco Door Condition							
① ② ③ ④ ⑤		Ladder / Steps Condition							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Filter Bed									
① ② ③ ④ ⑤		Filter Media Level							
① ② ③ ④ ⑤		Erosion of Filter Media / Exposed Filter Fabric							
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>							
Observation Well / Cleanout(s)									
① ② ③ ④ ⑤		Missing / Not Found							
① ② ③ ④ ⑤		Damage / Deterioration							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Clearwell									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>							
① ② ③ ④ ⑤		Spalling / Deterioration							
① ② ③ ④ ⑤		Underdrain(s) Condition							
① ② ③ ④ ⑤		Emergency Overflow <i>Type:</i>							
① ② ③ ④ ⑤		Manhole / Bilco Door Condition							
① ② ③ ④ ⑤		Ladder / Steps Condition							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Dewatering Drain Valve									
① ② ③ ④ ⑤		Missing							
① ② ③ ④ ⑤		Not Fully Closed							
① ② ③ ④ ⑤		Damage / Deterioration							
① ② ③ ④ ⑤		Other: <i>Description:</i>							

# Post Construction BMP Policies/Procedures

Sand Filter Inspection Form		Page 2						
Site ID: _____	Facility ID: _____	Facility Name: _____						
Austin Sand Filter								
Control Structure								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
①②③④⑤		Damage / Deterioration <i>Description:</i>						
①②③④⑤		Vegetation / External Obstructions						
①②③④⑤		Other: <i>Description:</i>						
		Low-Flow Orifice and Trash Rack	Orifice Size:					
①	⊕ ⊗	Orifice Plate Missing / Non-Functional						
①	⊕ ⊗	Trash Rack Missing / Non-Functional						
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )						
①②③④⑤		Damage / Deterioration <i>Description:</i>						
		Top Trash Rack and Anti-Vortex Plate						
①	⊕ ⊗	Pad Lock Missing						
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )						
①②③④⑤		Damage / Deterioration <i>Description:</i>						
		Riser Interior						
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
①②③④⑤		Ladder / Steps Condition						
		Principal Spillway Pipe, Upstream End						
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )						
①②③④⑤		Spalling / Deterioration						
①②③④⑤		Separation / Misaligned Joints						
Dam / Berm and Emergency Spillway								
Sep Auxiliary Spillway:								
SCORE	PHOTO	DESCRIPTION	FACE SLOPE	TOP OF DAM	BACK SLOPE	EMERG. SPILLWAY		
			Score Comments	Score Comments	Score Comments	Material: Score Comments		
①②③④⑤		Toe Soft Spots / Cave-In						
①②③④⑤		Slope Erosion / Bare Spots						
①②③④⑤		Animal Holes						
①②③④⑤		Tree Removal <i>Num./Size:</i>						
①②③④⑤		Overgrown Vegetation						
①②③④⑤		Other: <i>Description:</i>						
①②③④⑤		Blockage at Emergency Spillway ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )						
①②③④⑤		Damage / Deterioration at Emergency Spillway <i>Description:</i>						
Ponding Area								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
①②③④⑤		Erosion / Bare Spots <i>Area:</i>						
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
①②③④⑤		Overgrown Vegetation						
①②③④⑤		Tree Removal <i>Number / Size:</i>						
①②③④⑤		Gabion Wall Condition						
①②③④⑤		Other: <i>Description:</i>						
Inflow(s)								
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
		End Type / Material / Size:						
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )						
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>						
①②③④⑤		Erosion / Undermining <i>Area:</i>						
①②③④⑤		Spalling / Deterioration						
①②③④⑤		Separation / Misalignment						
①②③④⑤		Overgrown Vegetation / Tree Removal						
①②③④⑤		Other:						
Outfall Structure / Other								
Outfall Structure								
Material:		Size:		End Type:				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )						
①②③④⑤		Trash / Debris / Sediment						
①②③④⑤		Erosion / Undermining <i>Area:</i>						
①②③④⑤		Spalling / Deterioration						
①②③④⑤		Separation / Misalignment						
①②③④⑤		Overgrown Vegetation / Tree Removal						
①②③④⑤		Manhole Condition						
①②③④⑤		Ladder / Steps Condition						
①②③④⑤		Downstream Channel Condition						
①②③④⑤		Other:						
Other								
SCORE	PHOTO	DESCRIPTION	LOCATION					
①②③④⑤		Encroachments						
①②③④⑤		Modifications						
①②③④⑤		Mosquito Habitat						
①②③④⑤		Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>						
<b>INSPECTOR COMMENTS</b>								

# Post Construction BMP Policies/Procedures

## A-13: Tree Filter Inspection Form

<b>Tree Filter Inspection Form</b>				Inspector: _____ Cert <input type="radio"/>
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector: _____ Cert <input type="radio"/>
Site ID: _____		Facility ID: _____		Date: _____
Facility Name: _____		Coordinates / ParID : _____		
Address: _____		Watershed: _____ District: _____		
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	① High Priority / Non-functional	
Score Totals: <input type="text"/> <input type="text"/> <input type="text"/>			② Moderate Priority / Approaching Non-functional	
1      2      3			③ Low Priority / Functional	
		④ No Priority / Continue Routine Maintenance		
		⑤ Not Applicable		
Notes / Specifications:		Facility Specific Info:		
Facility Type / Addl Facility Info:				
Signs		Weather Conditions		
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date: _____ Amount: _____
③ ④ ⑤	<input type="checkbox"/>	Facility Sign		Data Source: _____
③ ④ ⑤	<input type="checkbox"/>	Facility Labeling	Current weather conditions? _____	
Accessibility				
Access Comments:		<b>ACCESS PROBLEMS (Circle One)</b>		<b>NEXT STEP (Circle One)</b>
New Access Comments for EAM:		Locked Gate / Fence		Coordinate with Owner
		Parked Cars		Return for Re-inspection
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover	
① ② ③ ④ ⑤	<input type="checkbox"/>	Overall Facility Access	Request Photos from Owner	
① ② ③ ④ ⑤	<input type="checkbox"/>	Component Access: _____	Equipment Needed: _____ Contact MSMD	
		Other: _____	Other: _____	
Filter Box / Control Structure				
① ② ③ ④ ⑤	<input type="checkbox"/>	Surge Stone / Energy Dissipator Missing		
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage at Throat ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
① ② ③ ④ ⑤	<input type="checkbox"/>	Trash / Debris / Sediment <i>Description / Amount:</i>		
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration of the Grate		
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration of the Structure		
① ② ③ ④ ⑤	<input type="checkbox"/>	Overgrown Vegetation / External Obstruction		
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: _____		
Plant Material		Plants in Inventory:		
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing / Dead	Observed: _____	Specified: _____
① ② ③ ④ ⑤	<input type="checkbox"/>	Unhealthy / Damaged		
① ② ③ ④ ⑤	<input type="checkbox"/>	Overgrown / Invasive Vegetation		
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: _____ <i>Description:</i>		
Mulch				
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing		
① ② ③ ④ ⑤	<input type="checkbox"/>	Not at Design Thickness		
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: _____ <i>Description:</i>		
Observation Well / Cleanout(s)				
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing / Not Found		
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration		
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: _____ <i>Description:</i>		
Emergency Overflow / Outfall Structure				
		Emergency Overflow Provided?		Yes / No
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS	
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
① ② ③ ④ ⑤	<input type="checkbox"/>	Trash / Debris / Sediment <i>Description / Amount:</i>		
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration		
① ② ③ ④ ⑤	<input type="checkbox"/>	Overgrown Vegetation / External Obstruction		
① ② ③ ④ ⑤	<input type="checkbox"/>	Manhole Condition		
① ② ③ ④ ⑤	<input type="checkbox"/>	Ladder / Steps Condition		
① ② ③ ④ ⑤	<input type="checkbox"/>	Downstream Pipe Condition		
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: _____ <i>Description:</i>		
Underdrain Pipe				
① ② ③ ④ ⑤	<input type="checkbox"/>	Missing / Not Found		
① ② ③ ④ ⑤	<input type="checkbox"/>	Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
① ② ③ ④ ⑤	<input type="checkbox"/>	Damage / Deterioration		
① ② ③ ④ ⑤	<input type="checkbox"/>	Other: _____ <i>Description:</i>		
Other				
SCORE	PHOTO	DESCRIPTION	LOCATION	
① ② ③ ④ ⑤	<input type="checkbox"/>	Encroachments		
① ② ③ ④ ⑤	<input type="checkbox"/>	Modifications		
① ② ③ ④ ⑤	<input type="checkbox"/>	Mosquito Habitat		
① ② ③ ④ ⑤	<input type="checkbox"/>	Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>		
<b>INSPECTOR COMMENTS</b>				

Post Construction BMP Policies/Procedures

A-14: Infiltration Trench Inspection Form

Infiltration Trench Inspection Form				Inspector:	Cert <input type="radio"/>				
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert <input type="radio"/>				
				Date:					
Site ID: _____	Facility ID: <u>2055TR</u>	Facility Name: _____							
Address: _____		Coordinates / ParID: _____		Watershed: _____ District: _____					
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		Scoring Key	①	High Priority / Non-functional					
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3	②	Moderate Priority / Approaching Non-functional		
1	2		3						
			③	Low Priority / Functional					
			④	No Priority / Continue Routine Maintenance					
		⑤	Not Applicable						
Notes / Specifications:			Facility Specific Info:						
Facility Type / Addl Facility Info:									
Signs			Weather Conditions						
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:				
① ② ③		Facility Sign		Data Source:					
① ② ③		Facility Labeling	Current weather conditions?						
Accessibility									
Access Comments:			ACCESS PROBLEMS (Circle)		NEXT STEP (Circle One)				
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner				
			Parked Cars		Return for Re-inspection				
SCORE	PHOTO	DESCRIPTION	Stuck / Broken Cover		Request Photos from Owner				
①	④ ⑤	Overall Facility Access	Equipment Needed: _____		Contact MSMD				
① ② ③ ④ ⑤		Component Access:	Other: _____		Other: _____				
Surface Trench Components									
Gravel Bed Surface									
Surface Cover: Gravel / Grass / Both / Other: _____									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
①	④ ⑤	Trench Eliminated							
①	④ ⑤	Gravel Not Found Under Turf	Depth to Gravel (if applicable):						
①	④ ⑤	Gravel Footprint	Area Observed:		Area Specified:				
① ② ③ ④ ⑤		Trash / Debris / Sediment	Description / Amount:						
① ② ③ ④ ⑤		Unauthorized Planting	Description:						
① ② ③ ④ ⑤		Bare Spots / Erosion	Area:						
① ② ③ ④ ⑤		Condition of Grass or Gravel	Overgrown / Inconsistent with Plans						
① ② ③ ④ ⑤		Repair Filter Fabric							
① ② ③ ④ ⑤		Other:	Description:						
Observation Well / Cleanout(s)									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
①	④ ⑤	Missing / Not Found	Observed:		Specified:				
①	④ ⑤	Cap Missing / Stuck							
① ② ③ ④ ⑤		Water / Sediment Observed in Well?							
① ② ③ ④ ⑤		Damaged							
① ② ③ ④ ⑤		Other:	Description:						
Dam / Berm and Emergency Spillway									
Required by Plans? <input type="checkbox"/> Yes <input type="checkbox"/> No									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
①	④ ⑤	Missing	Observed:		Specified:				
① ② ③ ④ ⑤		Erosion / Bare Spots	Area:						
① ② ③ ④ ⑤		Cave-In							
① ② ③ ④ ⑤		Animal Holes							
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal							
① ② ③ ④ ⑤		Trash / Debris / Sediment	Description / Amount:						
① ② ③ ④ ⑤		Other:	Description:						
Surface Inflows and Roof Drains									
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	
		Inflow Type (Sheet Flow, Curb Cut, Roof Downspout, Pipe, etc.):							
		Pipe Material:							
		Pipe Size:							
①	④ ⑤	Roof Drain Downspout Disconnected							
① ② ③ ④ ⑤		Blockage ( @ < 25% < @ < 75% < @ )							
① ② ③ ④ ⑤		Spalling / Deterioration							
① ② ③ ④ ⑤		Erosion / Undermining							
① ② ③ ④ ⑤		Trash / Debris / Sediment Removal							
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal							
① ② ③ ④ ⑤		Other:							
Inflow Summary									
①	④ ⑤	Curb Cuts Missing / Inconsistent with Plans	Observed:		Specified:				
①	④ ⑤	Inflow Diverted Away From Trench	Observed:		Specified:				
① ② ③ ④ ⑤		Other:							
Pre-Treatment / Energy Dissipators									
Type(s): Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Plunge pool / Sediment trap / Sump pit / Other: _____									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
①	④ ⑤	Missing / Non-Functional	Description:						
①	④ ⑤	Inconsistent with Plans (Area, Vertical Drop, etc.)	Observed:		Specified:				
① ② ③ ④ ⑤		Damage / Deterioration	Description:						
① ② ③ ④ ⑤		Trash / Debris / Sediment	Description / Amount:						
① ② ③ ④ ⑤		Other:							



# Post Construction BMP Policies/Procedures

Infiltration Trench Inspection Form						Page 2
Site ID: _____		Facility ID: _____		Facility Name: _____		
Underground Trench Components						
Control Structure						
Function:	Orifice Size:	Structure # on Plans:	Label(s) on Sketch:			
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>			
①②③④⑤		Standing Water (after dry weather)				
①②③④⑤		Trash / Debris / Sediment <small>Description / Amount:</small>				
①②③④⑤		Spalling / Deterioration				
①②③④⑤		Manhole / Bilco Door Condition				
①②③④⑤		Ladder / Steps Condition				
①②③④⑤		Other: <small>Description:</small>				
Low-Flow Orifice and Trash Rack						
①	②③	Orifice Plate Missing / Non-Functional				
①	②③	Trash Rack Missing / Non-Functional				
①②③④⑤		Blockage <small>( ∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅ )</small>				
①②③④⑤		Damage / Deterioration <small>Description:</small>				
Higher-Flow Orifice / Weir						
①	②③	Missing / Not Found	Observed:	Specified:		
①②③④⑤		Blockage <small>( ∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅ )</small>				
①②③④⑤		Other: <small>Description:</small>				
Outlet Pipe						
①②③④⑤		Blockage <small>( ∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅ )</small>				
①②③④⑤		Spalling / Deterioration				
①②③④⑤		Separation / Misalignment				
Detention Pipe / Vault						
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
		Structure # on Plans:				
		Label on Sketch:				
①②③④⑤		Standing Water (after dry weather)				
①②③④⑤		Trash / Debris / Sediment <small>Description / Amount:</small>				
①②③④⑤		Spalling / Deterioration				
①②③④⑤		Separation / Misalignment				
①②③④⑤		Inflow Pipes, if any <small>Pipe Direction / Problem:</small>				
①②③④⑤		Manhole / Bilco Door Condition				
①②③④⑤		Ladder / Steps Condition				
①②③④⑤		Blockage <small>( ∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅ )</small>				
①②③④⑤		Other: <small>Description:</small>				
Outfall Structure / Other						
Outfall Structure						
Material:	Size:	End Type:				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>			
①②③④⑤		Blockage <small>( ∅ &lt; 25% &lt; ∅ &lt; 75% &lt; ∅ )</small>				
①②③④⑤		Trash / Debris / Sediment				
①②③④⑤		Erosion / Undermining <small>Area:</small>				
①②③④⑤		Spalling / Deterioration				
①②③④⑤		Separation / Misalignment				
①②③④⑤		Overgrown Vegetation / Tree Removal				
①②③④⑤		Manhole Condition				
①②③④⑤		Ladder / Steps Condition				
①②③④⑤		Downstream Channel Condition				
①②③④⑤		Other:				
Other						
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>			
①②③④⑤		Encroachments				
①②③④⑤		Modifications				
①②③④⑤		Mosquito Habitat				
①②③④⑤		Evidence of Possible Illicit Discharge <small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>				
<b>INSPECTOR COMMENTS</b>						

Post Construction BMP Policies/Procedures

A-15: Underground Detention Inspection Form

Underground Detention Inspection Form				Inspector:	Cert <input type="radio"/>			
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert <input type="radio"/>			
				Date:				
Site ID: _____	Facility ID: _____	Facility Name: _____						
Address: _____		Coordinates / ParID : _____						
		Watershed: _____	District: _____					
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		Scoring Key	<input type="radio"/> High Priority / Non-functional <input type="radio"/> Moderate Priority / Approaching Non-functional <input type="radio"/> Low Priority / Functional <input type="radio"/> No Priority / Continue Routine Maintenance <input type="radio"/> Not Applicable					
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3			
1	2		3					
Notes / Specifications: _____								
Facility Specific Info: _____								
Facility Type / Addl Facility Info: _____								
Signs			Weather Conditions					
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:			
<input type="radio"/> <input type="radio"/> <input type="radio"/>		Facility Sign		Data Source:				
<input type="radio"/> <input type="radio"/> <input type="radio"/>		Facility Labeling	Current weather conditions?					
Accessibility								
Access Comments:			ACCESS PROBLEMS (Circle One)		NEXT STEP (Circle One) Coordinate with Owner Return for Re-inspection Request Photos from Owner Contact MSMD			
New Access Comments for EAM:			Locked Gate / Fence					
			Parked Cars					
			Stuck / Broken Cover					
SCORE	PHOTO	DESCRIPTION	Equipment Needed: _____		Other: _____			
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Overall Facility Access	Other: _____					
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Component Access:	Other: _____					
Control Structure								
Function:	Orifice Size:	Structure # on Plans:		Label(s) on Sketch:				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Standing Water (after dry weather)						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Trash / Debris / Sediment <i>Description / Amount:</i>						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Spalling / Deterioration						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Manhole / Bilco Door Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Ladder / Steps Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Other: <i>Description:</i>						
Low-Flow Orifice and Trash Rack								
<input type="radio"/> <input type="radio"/> <input type="radio"/>		Orifice Plate Missing / Non-Functional						
<input type="radio"/> <input type="radio"/> <input type="radio"/>		Trash Rack Missing / Non-Functional						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Blockage ( $\phi < 25\% < \phi < 75\% < \phi$ )						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Damage / Deterioration <i>Description:</i>						
Higher-Flow Orifice / Weir								
<input type="radio"/> <input type="radio"/> <input type="radio"/>		Missing / Not Found	Observed:	Specified:				
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Blockage ( $\phi < 25\% < \phi < 75\% < \phi$ )						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Other: <i>Description:</i>						
Outlet Pipe								
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Blockage ( $\phi < 25\% < \phi < 75\% < \phi$ )						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Spalling / Deterioration						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Separation / Misalignment						
Detention Pipe / Vault								
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
			Structure # on Plans:					
			Label on Sketch:					
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Standing Water (after dry weather)						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Trash / Debris / Sediment <i>Description / Amount:</i>						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Spalling / Deterioration						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Separation / Misalignment						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Inflow Pipes, if any <i>Pipe Direction / Problem:</i>						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Manhole / Bilco Door Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Ladder / Steps Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Blockage ( $\phi < 25\% < \phi < 75\% < \phi$ )						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Other: <i>Description:</i>						
Outfall Structure								
Material:	Size:	End Type:						
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS					
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Blockage ( $\phi < 25\% < \phi < 75\% < \phi$ )						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Trash / Debris / Sediment						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Erosion / Undermining <i>Area:</i>						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Spalling / Deterioration						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Separation / Misalignment						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Overgrown Vegetation / Tree Removal						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Manhole Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Ladder / Steps Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Downstream Channel Condition						
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>		Other:						

## Post Construction BMP Policies/Procedures

Underground Detention Inspection Form		Page 2	
Site ID: _____		Facility ID: _____ Facility Name: _____	
Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③④⑤		Encroachments	
①②③④⑤		Modifications	
①②③④⑤		Mosquito Habitat	
①②③④⑤		Evidence of Possible Illicit Discharge	
<i>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</i>			
<b>INSPECTOR COMMENTS</b>			

Post Construction BMP Policies/Procedures

A-16: Vegetated Filter Strip/Open Space Inspection Form

<b>Vegetated Filter Strip / Open Space Inspection Form</b>				Inspector:	Cert <input type="radio"/>				
<i>Fairfax County Maintenance and Stormwater Management Division</i>				Inspector:	Cert <input type="radio"/>				
Fairfax County Maintenance and Stormwater Management Division				Date:					
Site ID: _____	Facility ID: _____	Facility Name: _____							
Address: _____		Coordinates / ParID : _____		Watershed: _____ District: _____					
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Scoring Key</b>	①	High Priority / Non-functional					
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>			1	2	3	②	Moderate Priority / Approaching Non-functional		
1	2		3						
			③	Low Priority / Functional					
			④	No Priority / Continue Routine Maintenance					
		⑤	Not Applicable						
Notes / Specifications: _____			Facility Specific Info: _____						
Facility Type / Addl Facility Info: _____									
Signs			Weather Conditions						
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date:	Amount:				
① ④ ⑤		Facility Sign							
③ ④ ⑤		Facility Labeling		Data Source:					
			Current weather conditions?						
Accessibility									
Access Comments:			<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>				
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner				
			Other: _____		Return for Re-inspection				
SCORE	PHOTO	DESCRIPTION							
① ④ ⑤		Overall Facility Access	Request Photos from Owner						
① ② ③ ④ ⑤		Component Access:	Contact MSMD						
			Other: _____						
Energy Dissipator									
Type: Gravel Diaphragm / Engineered Level Spreader / Other: _____			Required by Plans?		Yes / No				
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
① ④ ⑤		Missing / Non-Functional <i>Description:</i>							
① ④ ⑤		Inconsistent with Plans <i>(Area, Vertical Drop, etc.)</i>	Observed:	Specified:					
① ② ③ ④ ⑤		Damage / Deterioration <i>Description:</i>							
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Vegetated Filter Strip / Open Space									
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS						
① ④ ⑤		Ponding Water (after dry weather)							
① ② ③ ④ ⑤		Bare Spots / Erosion <i>Area:</i>							
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Plant Material									
Plants in Inventory:			Plants in Inventory:		<b>Total % of Plant Material Coverage:</b>				
① ② ③ ④ ⑤		Trees Missing <i>(20% &lt; ④ &lt; 40% &lt; ⑤ &lt; 60% &lt; ①)</i>	Observed:	Specified:					
① ② ③ ④ ⑤		Shrubs Missing <i>(see above)</i>	Observed:	Specified:					
① ② ③ ④ ⑤		Groundcover Plants Missing <i>VF: Turf grass is normal. OS: No mowing, maintain original forest understory.</i>	Observed:	Specified:					
① ② ③ ④ ⑤		Unhealthy / Damaged							
① ② ③ ④ ⑤		Overgrown / Invasive Vegetation <i>VF: Mow twice/year or more to maintain turf grass. OS: Identify invasives, maintain original forest with understory.</i>							
① ② ③ ④ ⑤		Unauthorized Planting <i>Description:</i>							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Permeable Berm									
SCORE	PHOTO	DESCRIPTION	Required by Plans?		Yes / No				
① ④ ⑤		Missing / Non-Functional <i>Description:</i>							
① ② ③ ④ ⑤		Bare Spots / Erosion <i>Area:</i>							
① ② ③ ④ ⑤		Damaged <i>Description:</i>							
① ② ③ ④ ⑤		Trash / Debris / Sediment <i>Description / Amount:</i>							
① ② ③ ④ ⑤		Overgrown Vegetation							
① ② ③ ④ ⑤		Other: <i>Description:</i>							
Upstream Inflow(s)									
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6	
		End Type / Overland:							
		Pipe Material:							
		Pipe Size:							
① ② ③ ④ ⑤		Trash / Debris / Sediment Removal							
① ② ③ ④ ⑤		Blockage <i>( ③ &lt; 25% &lt; ④ &lt; 75% &lt; ① )</i>							
① ② ③ ④ ⑤		Spalling / Deterioration							
① ② ③ ④ ⑤		Erosion / Undermining							
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal							
① ② ③ ④ ⑤		Other:							

Vegetated Filter Strip / Open Space Inspection Form			Page 2
Site ID: _____	Facility ID: _____	Facility Name: _____	
Outfall Structure			
Material:	Size:	End Type:	
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
①②③④⑤		Blockage <small>( @ &lt; 25% &lt; @ &lt; 75% &lt; @ )</small>	
①②③④⑤		Trash / Debris / Sediment	
①②③④⑤		Erosion / Undermining <small>Area:</small>	
①②③④⑤		Spalling / Deterioration	
①②③④⑤		Separation / Misalignment	
①②③④⑤		Overgrown Vegetation / Tree Removal	
①②③④⑤		Manhole Condition	
①②③④⑤		Ladder / Steps Condition	
①②③④⑤		Downstream Channel Condition	
①②③④⑤		Other:	
Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
①②③④⑤		Encroachments	
①②③④⑤		Modifications	
①②③④⑤		Mosquito Habitat	
①②③④⑤		Evidence of Possible Illicit Discharge <small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>	
<b>INSPECTOR COMMENTS</b>			

# Post Construction BMP Policies/Procedures

## A-17: Vegetated Swale Inspection Form

<b>Vegetated Swale Inspection Form</b>				Inspector:	Cert <input type="checkbox"/>			
<b>Grass Channel, Dry Swale, Wet Swale, and Regenerative Stormwater Conveyance</b>				Inspector:	Cert <input type="checkbox"/>			
<i>Fairfax County Maintenance and Stormwater Management Division</i>								
Site ID: _____	Facility ID: _____	Facility Name: _____						
Address: _____		Coordinates / ParID: _____		Date: _____				
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		Watershed: _____		District: _____				
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>		1	2	3	<b>Scoring Key</b>	<input type="radio"/> ① High Priority / Non-functional <input type="radio"/> ② Moderate Priority / Approaching Non-functional <input type="radio"/> ③ Low Priority / Functional <input type="radio"/> ④ No Priority / Continue Routine Maintenance <input type="radio"/> ⑤ Not Applicable		
1	2	3						
Notes / Specifications: _____		Facility Specific Info: _____						
Facility Type / Addl Facility Info: _____								
<b>Signs</b>			<b>Weather Conditions</b>					
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>Last Rainfall</b>	<b>Date:</b>	<b>Amount:</b>			
① ② ③ ④ ⑤	[ ]	Facility Sign						
① ② ③ ④ ⑤	[ ]	Facility Labeling	Current weather conditions? _____					
<b>Accessibility</b>								
<b>Access Comments:</b>		<b>ACCESS PROBLEMS (Circle)</b>		<b>NEXT STEP (Circle One)</b>				
New Access Comments for EAM: _____		Locked Gate / Fence		Coordinate with Owner				
		Heavy Vegetation		Return for Re-inspection				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	Equipment Needed: _____		Request Photos from Owner			
① ② ③ ④ ⑤	[ ]	Overall Facility Access	Other: _____		Contact MSMD			
① ② ③ ④ ⑤	[ ]	Component Access: _____	Other: _____					
<b>Vegetated Swale</b>								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>					
① ② ③ ④ ⑤	[ ]	Trash / Debris / Sediment <small>Description / Amount:</small>						
① ② ③ ④ ⑤	[ ]	Bare Spots / Erosion <small>Area:</small>						
① ② ③ ④ ⑤	[ ]	Ponding Water <small>(where not part of design)</small>						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Check Dams</b>								
① ② ③ ④ ⑤	[ ]	Missing / Inconsistent with Plans	Observed: _____	Specified: _____				
① ② ③ ④ ⑤	[ ]	Damaged						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Observation Well / Cleanout(s)</b>								
① ② ③ ④ ⑤	[ ]	Missing / Not Found	# Observed: _____	# Specified: _____				
① ② ③ ④ ⑤	[ ]	Cap Missing / Stuck						
① ② ③ ④ ⑤	[ ]	Water / Sediment Observed in Well?						
① ② ③ ④ ⑤	[ ]	Vegetation / External Obstructions						
① ② ③ ④ ⑤	[ ]	Damaged						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Plant Material</b>			<b>Plants in Inventory:</b>					
① ② ③ ④ ⑤	[ ]	Trees Missing <small>(20% &lt; ① &lt; 40% &lt; ② &lt; 60% &lt; ③)</small>	Observed: _____	Specified: _____	Total % of Plant Material Coverage: _____			
① ② ③ ④ ⑤	[ ]	Shrubs Missing <small>(see above)</small>	Observed: _____	Specified: _____				
① ② ③ ④ ⑤	[ ]	Groundcover Plants Missing <small>(see above)</small>	Observed: _____	Specified: _____				
① ② ③ ④ ⑤	[ ]	Wetland Vegetation	Observed: _____	Specified: _____				
① ② ③ ④ ⑤	[ ]	Unhealthy / Damaged						
① ② ③ ④ ⑤	[ ]	Unauthorized Planting <small>Description:</small>						
① ② ③ ④ ⑤	[ ]	Overgrown / Invasive Vegetation						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Wet Swale Components</b>								
① ② ③ ④ ⑤	[ ]	Water Level Inconsistent with Plans						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Regenerative Stormwater Conveyance Components</b>								
① ② ③ ④ ⑤	[ ]	Step Pool Condition						
① ② ③ ④ ⑤	[ ]	Rifle Condition						
① ② ③ ④ ⑤	[ ]	Displaced Stones						
① ② ③ ④ ⑤	[ ]	Root Wads and Other Woody Habitat Structures						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Upstream Inflow(s)</b>								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
		End Type / Overland:						
		Pipe Material:						
		Pipe Size:						
① ② ③ ④ ⑤	[ ]	Trash / Debris / Sediment Removal						
① ② ③ ④ ⑤	[ ]	Blockage <small>( ① &lt; 25% &lt; ② &lt; 75% &lt; ③ )</small>						
① ② ③ ④ ⑤	[ ]	Spalling / Deterioration						
① ② ③ ④ ⑤	[ ]	Erosion / Undermining						
① ② ③ ④ ⑤	[ ]	Overgrown Vegetation / Tree Removal						
① ② ③ ④ ⑤	[ ]	Other: _____						
<b>Pre-Treatment / Energy Dissipators</b>								
Type(s): Flow spreader / Forebay / Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Other: _____								
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>					
① ② ③ ④ ⑤	[ ]	Missing / Non-Functional <small>Description:</small>						
① ② ③ ④ ⑤	[ ]	Inconsistent with Plans <small>(Area, Vertical Drop, etc.)</small>	Observed: _____	Specified: _____				
① ② ③ ④ ⑤	[ ]	Damage / Deterioration <small>Description:</small>						
① ② ③ ④ ⑤	[ ]	Trash / Debris / Sediment <small>Description / Amount:</small>						
① ② ③ ④ ⑤	[ ]	Other: _____						



# Post Construction BMP Policies/Procedures

Vegetated Swale Inspection Form		Page 2	
Site ID: _____		Facility ID: _____ Facility Name: _____	
Underdrain(s)			
Specified on Approved Plans?			
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
① ② ③ ④		Missing	
① ② ③ ④		Blockage ( ∅ < 25% < ∅ < 75% < ∅ )	
① ② ③ ④		Spalling / Deterioration	
① ② ③ ④		Separation / Misaligned Joints	
① ② ③ ④		Other:	
Outfall Structure			
Material:		Size:	End Type:
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSIONS
① ② ③ ④		Blockage ( ∅ < 25% < ∅ < 75% < ∅ )	
① ② ③ ④		Trash / Debris / Sediment	
① ② ③ ④		Erosion / Undermining Area:	
① ② ③ ④		Spalling / Deterioration	
① ② ③ ④		Separation / Misalignment	
① ② ③ ④		Overgrown Vegetation / Tree Removal	
① ② ③ ④		Manhole Condition	
① ② ③ ④		Ladder / Steps Condition	
① ② ③ ④		Downstream Channel Condition	
① ② ③ ④		Other:	
Other			
SCORE	PHOTO	DESCRIPTION	LOCATION
① ② ③ ④		Encroachments	
① ② ③ ④		Modifications	
① ② ③ ④		Mosquito Habitat	
① ② ③ ④		Evidence of Possible Illicit Discharge <small>(Email to report: <a href="mailto:stormwaterpollution@fairfaxcounty.gov">stormwaterpollution@fairfaxcounty.gov</a>)</small>	
<b>INSPECTOR COMMENTS</b>			

*Appendix B-Reporting Forms*

**B-1: Notice of Inspection (NOI)**

The NOI is the full inspection report sent to a private facility owner, and it includes a cover letter, CAR, photos with orientation sketch, any applicable site plans, a copy of the PMA (if applicable), GIS map, a copy of the County Maintenance guidelines, and a blank MAR (for the owner to complete and return). As most components of the NOI are already described or attached in the Appendices, we will include samples of six cover letters, covering:

- Facilities without required maintenance and with an established PMA
- Facilities with recommended maintenance and with an established PMA
- Facilities with required maintenance and with an established PMA
- Facilities without required maintenance and without an established PMA
- Facilities with recommended maintenance and without an established PMA
- Facilities with required maintenance and without an established PMA

Cover Letter with PMA (No required maintenance)



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

### CERTIFIED LETTER

The Owner  
1234 Everywhere Street  
Fairfax, VA 22033

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / BR0056**  
Project / Plan No.: **The Owner / 0102-SD-03-4**  
Location: **1234 Everywhere Street**  
Tax Map No: **023.4 ((56)) 0 0007**

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 10/16/2013, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Private Maintenance Agreement (Deed Book / Page: **12304 / 5607**)
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List

The following observation was made during the 10/16/2013 inspection: **Other than your normal routine maintenance, no additional maintenance activity appears to be needed at this time (see enclosed Condition Assessment Report).** We thank you for maintaining this facility in good condition and look forward to your continued cooperation in protecting the waters of Fairfax County and the Chesapeake Bay.

The enclosed Private Maintenance Agreement ("PMA") governs the maintenance requirements for the stormwater management facility located on your property. The PMA was executed by the site developer/owner and the County to ensure proper functionality and regular maintenance for the life of the facility. This agreement runs with the land as part of the recorded deed and is binding upon all subsequent landowners of the property.

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Department of Public Works and Environmental Services  
Maintenance and Stormwater Management Division  
10635 West Drive, Fairfax, VA 22030-4229  
Phone: 703-877-2800, TTY: 711  
Email: [DPWES-MSMD-Inspections@fairfaxcounty.gov](mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov)  
[www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance)



Plan No: 0102-SD-03-4  
Facility ID: BR0056  
Page 2 of 2

Under the Fairfax County Stormwater Management Ordinance, the County is authorized to pursue enforcement against anyone who fails to maintain their stormwater management facility in accordance with the terms of the recorded PMA (Code of Fairfax County § 124-8-3(B)(vii)). Specifically, the County may seek civil penalties in an amount up to \$32,500 for each day that a violation exists (Code of Fairfax County § 124-8-3). Additionally, the County can take legal action to enforce the terms of the PMA.

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: [www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance).

Sincerely,

Todd Nelson, Chief  
Inspections and Enforcement Section

TLN/**Company Initials**  
Encl.: As Stated  
cc: Chron Files & Facility Files

Cover Letter with PMA (with recommended maintenance)



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

### CERTIFIED LETTER

The Owner  
1234 Universal Drive  
Chantilly, VA 20151

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / WP0058**  
Project / Plan No.: **The Owner / 2345-SP-06-7**  
Location: **1234 Universal Drive**  
Tax Map No: **012.3 ((45)) 0 0006**

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 10/22/2014, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Private Maintenance Agreement (Deed Book / Page: **12345 / 0006**)
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 10/22/2014 inspection: **Maintenance is recommended to ensure continued functionality of the facility (see enclosed Condition Assessment Report). Failure to perform timely maintenance may lead to greater expense in the future.**

The enclosed Private Maintenance Agreement ("PMA") governs the maintenance requirements for the stormwater management facility located on your property. The PMA was executed by the site developer/owner and the County to ensure proper functionality and regular maintenance for the life of the facility. This agreement runs with the land as part of the recorded deed and is binding upon all subsequent landowners of the property.

Department of Public Works and Environmental Services  
Maintenance and Stormwater Management Division

10635 West Drive, Fairfax, VA 22030-4229

Phone: 703-877-2800, TTY: 711

Email: [DPWES-MSMD-Inspections@fairfaxcounty.gov](mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov)

[www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance)



Plan No: 2345-SP-06-7  
Facility ID: WP0058  
Page 2 of 2

Under the Fairfax County Stormwater Management Ordinance, the County is authorized to pursue enforcement against anyone who fails to maintain their stormwater management facility in accordance with the terms of the recorded PMA (Code of Fairfax County § 124-8-3(B)(vii)). Specifically, the County may seek civil penalties in an amount up to \$32,500 for each day that a violation exists (Code of Fairfax County § 124-8-3). Additionally, the County can take legal action to enforce the terms of the PMA.

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. **MSMD requests that a responsible party perform the recommended maintenance to ensure continued functionality of the facility. Should you choose to perform the recommended maintenance, please complete the attached Maintenance Activity Report form and submit it to this office.**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: [www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance).

Sincerely,

Todd Nelson, Chief  
Inspections and Enforcement Section

TLN/**Company Initials**  
Encl.: As Stated  
cc: Chron Files & Facility Files



Cover Letter with PMA (with required maintenance)



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

### CERTIFIED LETTER

The Owner  
1234 Main Street  
Alexandria, VA 22306

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / BR0012**  
Project / Plan No.: **The Owner / 1234-SP-05-6**  
Location: **1234 Main Street**  
Tax Map No: **012.3 ((45)) 0 0006**

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 10/4/2016, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Private Maintenance Agreement (Deed Book / Page: **12345 / 6000**)
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 10/4/2016 inspection: **Immediate maintenance is required to restore proper functionality of the facility. Failure to comply will result in a Notice of Violation (Article 8 of the Stormwater Management Ordinance).**

The enclosed Private Maintenance Agreement ("PMA") governs the maintenance requirements for the stormwater management facility located on your property. The PMA was executed by the site developer/owner and the County to ensure proper functionality and regular maintenance for the life of the facility. This agreement runs with the land as part of the recorded deed and is binding upon all subsequent landowners of the property.

---

Department of Public Works and Environmental Services  
Maintenance and Stormwater Management Division  
10635 West Drive, Fairfax, VA 22030-4229  
Phone: 703-877-2800, TTY: 711  
Email: [DPWES-MSMD-Inspections@fairfaxcounty.gov](mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov)  
[www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance)



Plan No: 1234-SP-05-6  
Facility ID: BR0012  
Page 2 of 2

Under the Fairfax County Stormwater Management Ordinance, the County is authorized to pursue enforcement against anyone who fails to maintain their stormwater management facility in accordance with the terms of the recorded PMA (Code of Fairfax County § 124-8-3(B)(vii)). Specifically, the County may seek civil penalties in an amount up to \$32,500 for each day that a violation exists (Code of Fairfax County § 124-8-3). Additionally, the County can take legal action to enforce the terms of the PMA.

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. **MSMD requests that a responsible party respond to this letter in writing within 45 days of your receipt of this letter using the attached Maintenance Activity Report form (Attn: Private Inspection & Enforcement Program).**

To ensure that your response is complete, please note the following:

- Reference your Site ID and Facility ID in all verbal and written correspondence
- The MAR must be completed and signed for the facility listed above
- The MAR must address each maintenance issue described in the CAR
- Please include **photos**, invoices, contracts, proposals, and/or work plans with the MAR
- Relaying this information via phone does not substitute for completion of the form
- No extensions will be granted
- **All work must be completed in order to be closed**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: [www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance).

Sincerely,

Todd Nelson, Chief  
Inspections and Enforcement Section

TLN/**Company Initials**  
Encl.: As Stated  
cc: Chron Files & Facility Files

Cover Letter without PMA (No required maintenance)



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

### CERTIFIED LETTER

**Owner HOA**  
**1230 Beta Court**  
**Chantilly, VA 20151**

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S2345 / WP0123**  
Project / Plan No.: **Owner Sec. 1 / 1234-SD-05-6**  
Location: **1230 Beta Court**  
Tax Map No: **034.5 ((67)) Q F1**

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 4/22/2016, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List

The following observation was made during the 4/22/2016 inspection: **Other than your normal routine maintenance, no additional maintenance activity appears to be needed at this time (see enclosed Condition Assessment Report).** We thank you for maintaining this facility in good condition and look forward to your continued cooperation in protecting the waters of Fairfax County and the Chesapeake Bay.

The above-referenced stormwater management facility was constructed as part of a site plan approved by Fairfax County, the approval of which was contingent upon compliance with site development requirements related to the management of stormwater. Under Fairfax County Zoning Ordinance ("Zoning Ordinance") §§ 18-901(1) and 17-108(6) you are required to maintain the stormwater management facility in a condition that is consistent with the approved site plan. Failure to do so is a violation of the Zoning Ordinance.

Department of Public Works and Environmental Services  
Maintenance and Stormwater Management Division  
10635 West Drive, Fairfax, VA 22030-4229  
Phone: 703-877-2800, TTY: 711  
Email: [DPWES-MSMD-Inspections@fairfaxcounty.gov](mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov)  
[www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance)



## Post Construction BMP Policies/Procedures

Plan No: 1234-SP-05-6  
Facility ID: WP0123  
Page 2 of 2

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: [www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance).

Sincerely,

Todd Nelson, Chief  
Inspections and Enforcement Section

TLN/**Company Initials**  
Encl.: As Stated  
cc: Chron Files & Facility Files

Cover Letter without PMA (with recommended maintenance)



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

### CERTIFIED LETTER

The Owner  
1234 Everywhere Street  
Fairfax, VA 22030

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S3456 / TR0789**  
Project / Plan No.: **The Owner/ 1234-INF-05**  
Location: **1234 Everywhere Street**  
Tax Map No: **045.6 ((07)) 0 0008**

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 11/24/2015, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 11/24/2015 inspection: **Maintenance is recommended to ensure continued functionality of the facility (see enclosed Condition Assessment Report). Failure to perform timely maintenance may lead to greater expense in the future.**

The above-referenced stormwater management facility was constructed as part of a site plan approved by Fairfax County, the approval of which was contingent upon compliance with site development requirements related to the management of stormwater. Under Fairfax County Zoning Ordinance ("Zoning Ordinance") §§ 18-901(1) and 17-108(6) you are required to maintain the stormwater management facility in a condition that is consistent with the approved site plan. Failure to do so is a violation of the Zoning Ordinance.

Department of Public Works and Environmental Services  
Maintenance and Stormwater Management Division  
10635 West Drive, Fairfax, VA 22030-4229  
Phone: 703-877-2800, TTY: 711  
Email: [DPWES-MSMD-Inspections@fairfaxcounty.gov](mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov)  
[www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance)



Plan No: 1234-INF-05  
Facility ID: TR0789  
Page 2 of 2

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. **MSMD requests that a responsible party perform the recommended maintenance to ensure continued functionality of the facility. Should you choose to perform the recommended maintenance, please complete the attached Maintenance Activity Report form and submit it to this office.**

Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: [www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance).

Sincerely,

Todd Nelson, Chief  
Inspections and Enforcement Section

TLN/Company Initials  
Encl.: As Stated  
cc: Chron Files & Facility Files



Cover Letter without PMA (with required maintenance)



## County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

### CERTIFIED LETTER

**The Owner**  
2345 Beta Drive  
Annandale, VA 22003

Subject: Notice of Inspection of Privately Maintained Stormwater Management Facility

Reference: Site ID / Facility ID: **S1234 / DP0789**  
Project / Plan No.: **The Owner / 4567-PI-08**  
Location: **2345 Beta Drive**  
Tax Map No: **012.3 ((45)) O A**

Dear Facility Owner:

As part of Fairfax County's stormwater management program, Maintenance and Stormwater Management Division (MSMD) inspects stormwater management facilities to ensure proper maintenance is performed and that the facility is functioning according to the approved design. The County performs maintenance inspections of stormwater management facilities to meet state and federal regulatory requirements and practice good environmental stewardship. As the owner of the above-referenced facility, you are responsible for ensuring proper maintenance and functionality of the stormwater facility that serves your property.

On 11/13/2013, Fairfax County conducted a visual condition assessment of the above-referenced stormwater management facility. The purpose of this letter is to inform you of the inspection findings and any required maintenance activities that must be performed. The following are enclosed with this letter:

- Condition Assessment Report (CAR), including photos
- Copy of Approved Facility Plan Sheets
- Copy of Tax Map
- Copy of GIS Aerial Site Photo
- Maintenance Guidelines
- Maintenance Contractor List
- Maintenance Activity Report (MAR)

The following observation was made during the 11/13/2013 inspection: **Immediate maintenance is required to restore proper functionality of the facility. Failure to comply will result in a Notice of Violation (17-108(6) and 18-901(1) of the Zoning Ordinance).**

The above-referenced stormwater management facility was constructed as part of a site plan approved by Fairfax County, the approval of which was contingent upon compliance with site development requirements related to the management of stormwater. Under Fairfax County Zoning Ordinance ("Zoning Ordinance") §§ 18-901(1) and 17-108(6) you are required to maintain the stormwater management facility in a condition that is consistent with the approved site plan. Failure to do so is a violation of the Zoning Ordinance.

Department of Public Works and Environmental Services  
Maintenance and Stormwater Management Division

10635 West Drive, Fairfax, VA 22030-4229  
Phone: 703-877-2800, TTY: 711

Email: [DPWES-MSMD-Inspections@fairfaxcounty.gov](mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov)  
[www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance)



## Post Construction BMP Policies/Procedures

Plan No: 4567-PI-08  
Facility ID: DP0456  
Page 2 of 2

The enclosed stormwater management guidelines are provided to you as a courtesy and are based on general knowledge of maintenance required for these types of facilities. The guidelines are not meant to replace or supersede any specific recommendations offered by a qualified professional. MSMD requests that a responsible party respond to this letter in writing within 45 days of your receipt of this letter using the attached Maintenance Activity Report form (Attn: Private Inspection & Enforcement Program).

To ensure that your response is complete, please note the following:

- Reference your Site ID and Facility ID in all verbal and written correspondence
- The MAR must be completed and signed for the facility listed above
- The MAR must address each maintenance issue described in the CAR
- Please include **photos**, invoices, contracts, proposals, and/or work plans with the MAR
- Relaying this information via phone does not substitute for completion of the form
- No extensions will be granted
- **All work must be completed in order to be closed**


Your cooperation is greatly appreciated and will help the County meet its regulatory requirements and achieve its goal of protecting its streams, rivers and the Chesapeake Bay. If you have any questions regarding the Condition Assessment Report, please contact **Warren O'Hara** or me at (703) 877-2800. For additional information on maintaining stormwater management facilities, please visit our Website at: [www.fairfaxcounty.gov/dpwes/stormwater/maintenance](http://www.fairfaxcounty.gov/dpwes/stormwater/maintenance).

Sincerely,

Todd Nelson, Chief  
Inspections and Enforcement Section


TLN/**Company Initials**  
Encl.: As Stated  
cc: Chron Files & Facility Files

B-2: Condition Assessment Report (CAR)-this is an example using a Bioretention BMP



## BIORETENTION AREA

### CONDITION ASSESSMENT REPORT (CAR)



---

**Site ID / Facility ID:**

- No deficiencies were noted during the assessment. Thank you for maintaining your stormwater management facility in good working order. Please continue routine maintenance.
- Maintenance is requested to ensure continued functionality of the facility. Failure to perform timely maintenance may lead to greater expense in the future.
- Immediate maintenance is required to restore proper functionality of the facility. Failure to comply will result in a Notice of Violation (Article 8 of the Stormwater Management Ordinance).


**Summary of Condition Assessment**

Continue Routine Maintenance	Deficiencies Noted	
<input type="checkbox"/>	<input type="checkbox"/>	Facility Overall
<input type="checkbox"/>	<input type="checkbox"/>	Inflow(s)
<input type="checkbox"/>	<input type="checkbox"/>	Ponding Area
<input type="checkbox"/>	<input type="checkbox"/>	Control Structure
<input type="checkbox"/>	<input type="checkbox"/>	Overflow Berm
<input type="checkbox"/>	<input type="checkbox"/>	Underdrain(s) and Principal Spillway Pipe
<input type="checkbox"/>	<input type="checkbox"/>	Outfall

---


*This stormwater management Condition Assessment Report (CAR) offers a "point-in-time" representation of observed conditions at the facility and is not intended to provide any information regarding the functional integrity of the structure nor provide warranty as to present or future structure condition or performance. The CAR is not meant to replace or supersede any specific recommendation offered by a qualified professional.*

B-3: Maintenance and Activity Report (MAR)



## MAINTENANCE ACTIVITY REPORT

(Response requested within 45 days of receipt)



---

According to County records you are the current owner of a privately maintained stormwater management facility that had deficiencies at the time of an inspection on \_\_\_\_\_. This standard Maintenance Activity Report is requested as part of the private inspection/enforcement process. Failure to complete this form in a timely manner could result in a non-compliance status which could lead to enforcement activities.

Complete this form legibly in ink and mail or email to the following address within 45 days of receipt.  
**Please reference your Site ID and Facility ID in all correspondence**

---

<p><b>Attn: Visual Condition Assessment Program</b>                  Department of Public Works and Environmental Services                  Maintenance and Stormwater Management Division                  10635 West Drive                  Fairfax, Virginia 22030                  TEL: 703-877-2800                  Email: <a href="mailto:DPWES-MSMD-Inspections@fairfaxcounty.gov">DPWES-MSMD-Inspections@fairfaxcounty.gov</a></p>	<p><b>Facility Information (as shown on plan of record):</b>                  Project: _____                  Plan No: _____                  Location: _____                  Tax Map: _____                  Site ID / Facility ID: _____                  Watershed: _____</p>
---	---

---

**Ownership and Contact Information**

<p><b>Current Owner:</b>                  Name: _____                  Company: _____                  Address: _____                  _____                  Phone: _____                  Fax: _____                  Email: _____</p>	<p><b>Owner's Agent for Maintenance:</b>                  Name: _____                  Company: _____                  Address: _____                  _____                  Phone: _____                  Fax: _____                  Email: _____</p>
--	--

---

Description of Work Completed <small>Attach any invoices, photos or other information relative to maintenance performed or planned</small>	Date Completed	Cost

See other side for additional space.

I, \_\_\_\_\_, hereby certify that the statements above are true to the best of my knowledge.  
 Printed Name \_\_\_\_\_

\_\_\_\_\_  
 Signature (Owner or Owner's Agent)                      Title                      Date

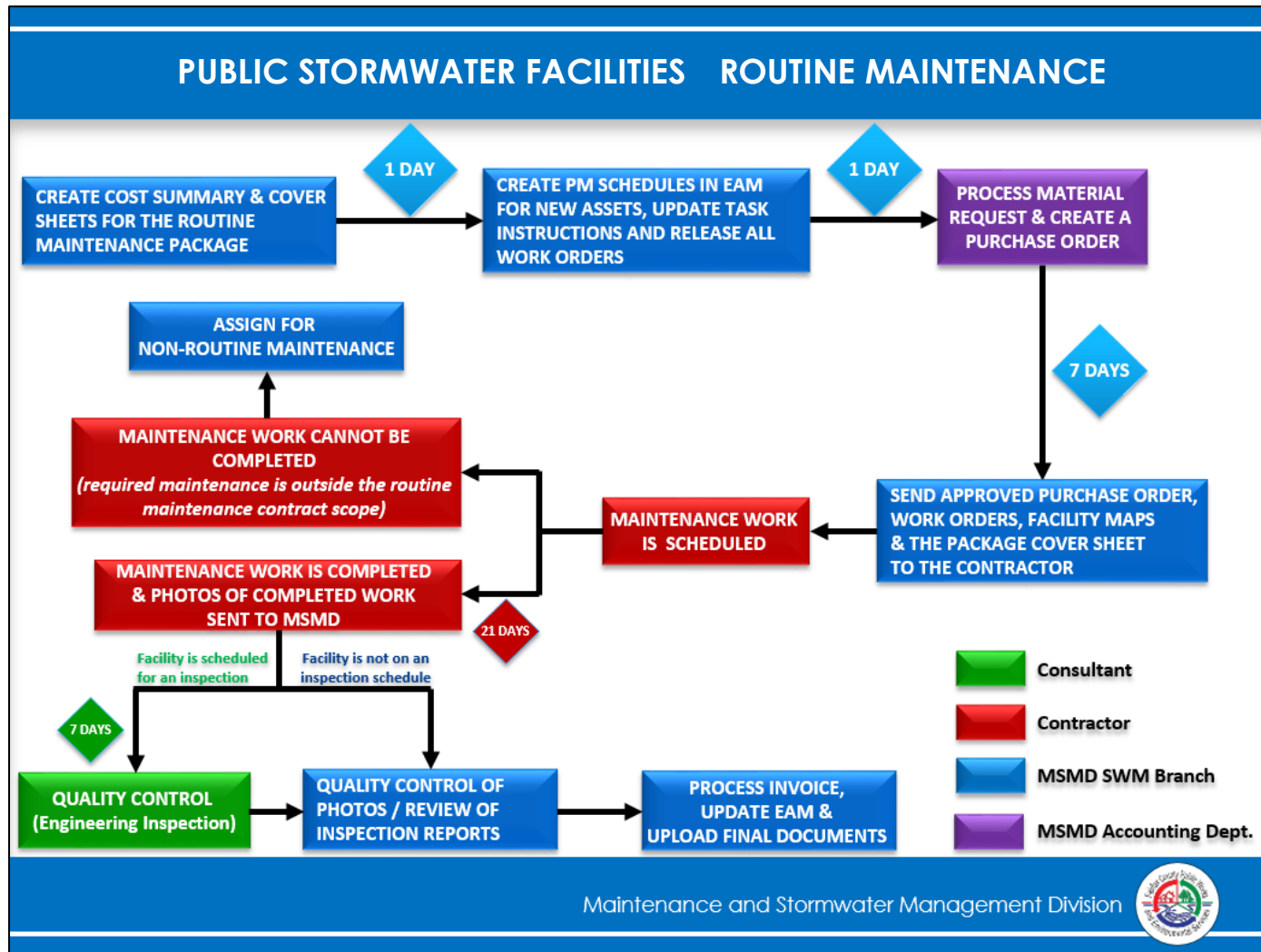
---

**Legislation/Regulations/Permitting/Guidelines:**

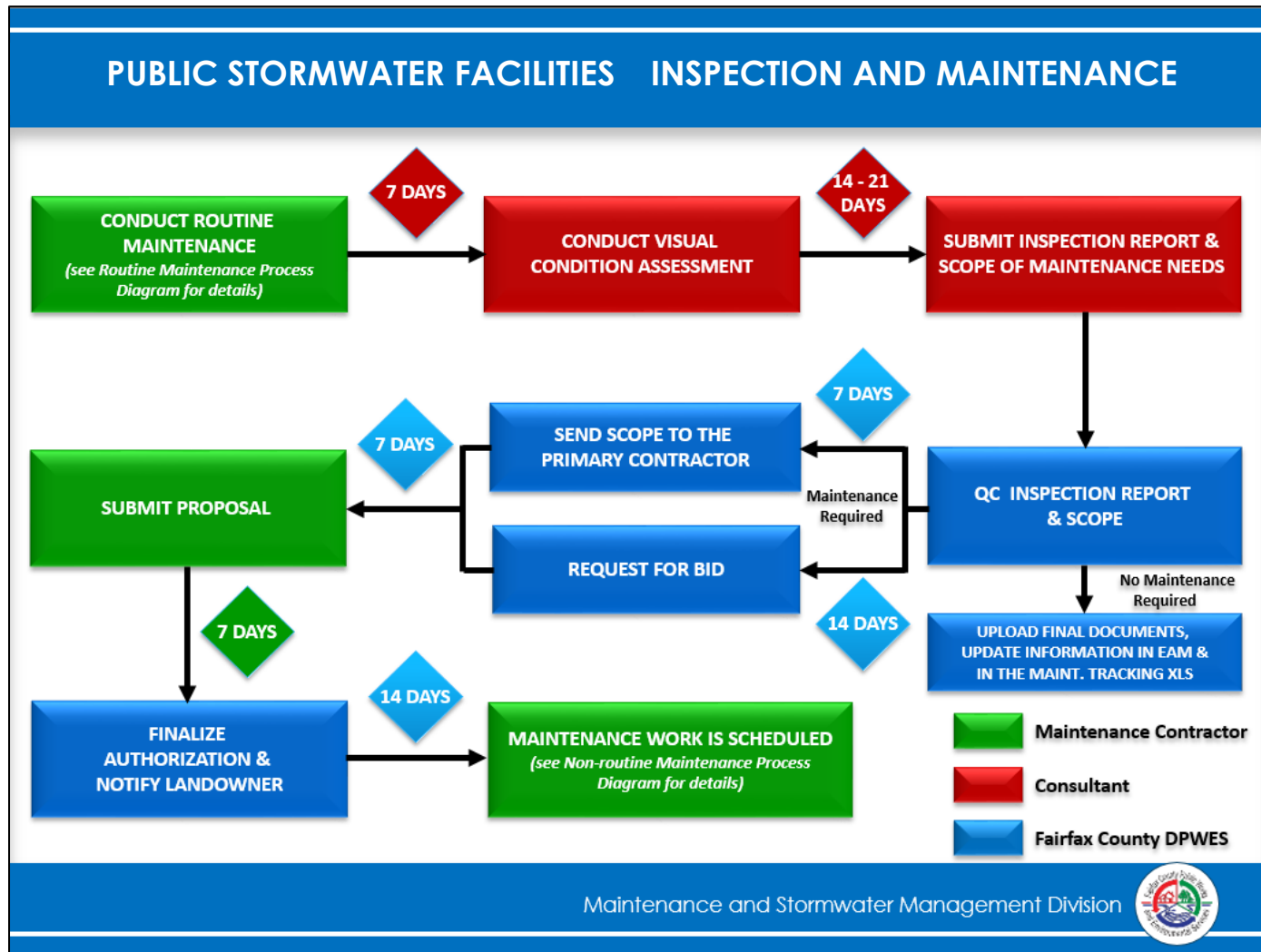
- Fairfax County Codified Ordinances – Chapters 104, 112, 118 & 124
- Fairfax County Public Facilities Manual (PFM), Chapter 6: Storm Drainage
- Virginia Stormwater Management Program (VSMP) (§9VAC25-870)
- Virginia Chesapeake Bay Preservation Act (§9VAC25-830)
- Federal Clean Water Act/Section 402-(P) enabling the National Pollution Discharge Elimination System under which Fairfax County is required to meet Federal mandates as required by the Municipal Separate Storm Sewer System (MS4) Permit #: VA0088587

Appendix C-Work Flow Process Charts

C-1: Public Stormwater Facilities-Routine Maintenance

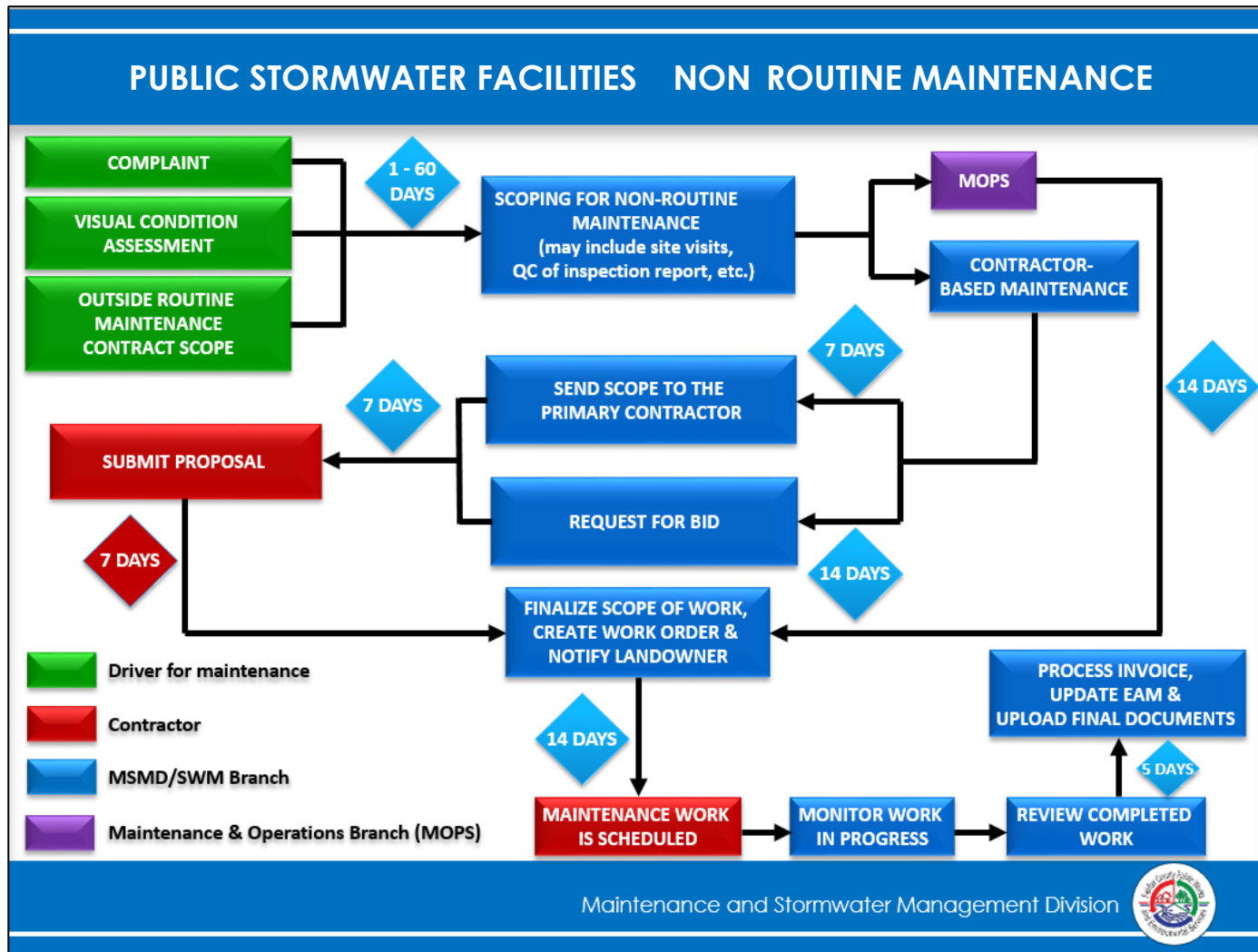


C-2: Public Stormwater Facilities-Inspection and Maintenance

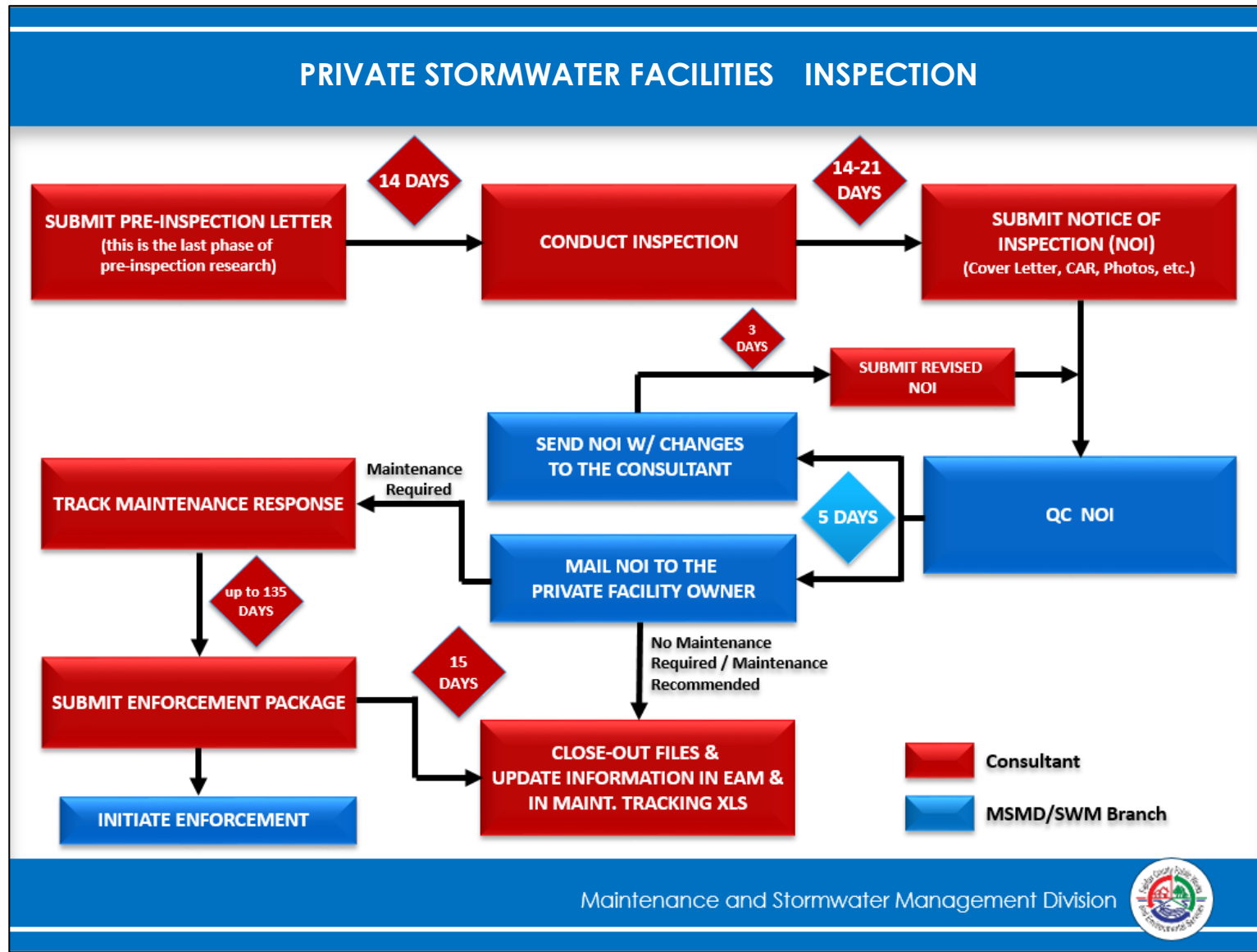




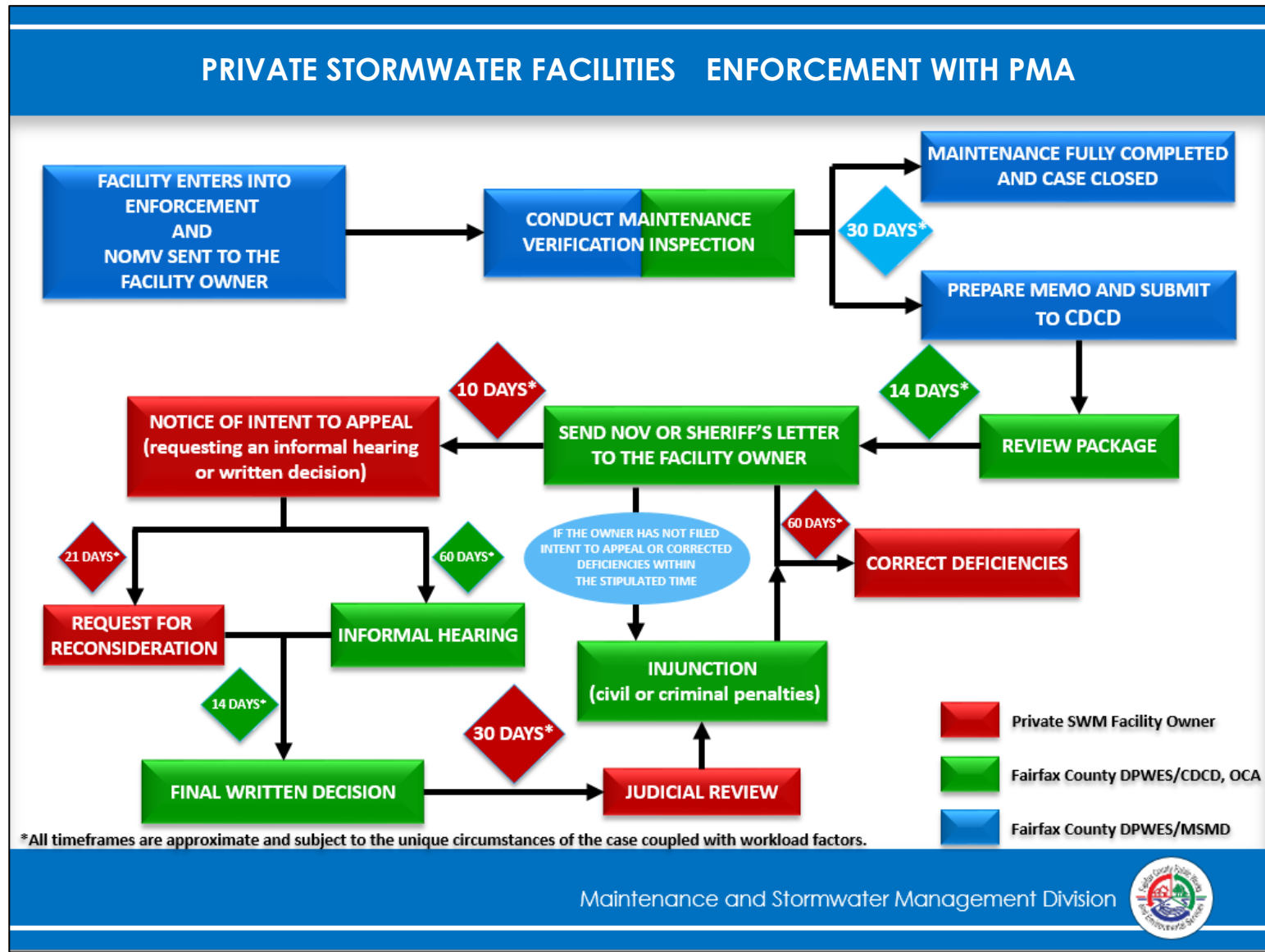
C-3: Public Stormwater Facilities-Non-routine Maintenance



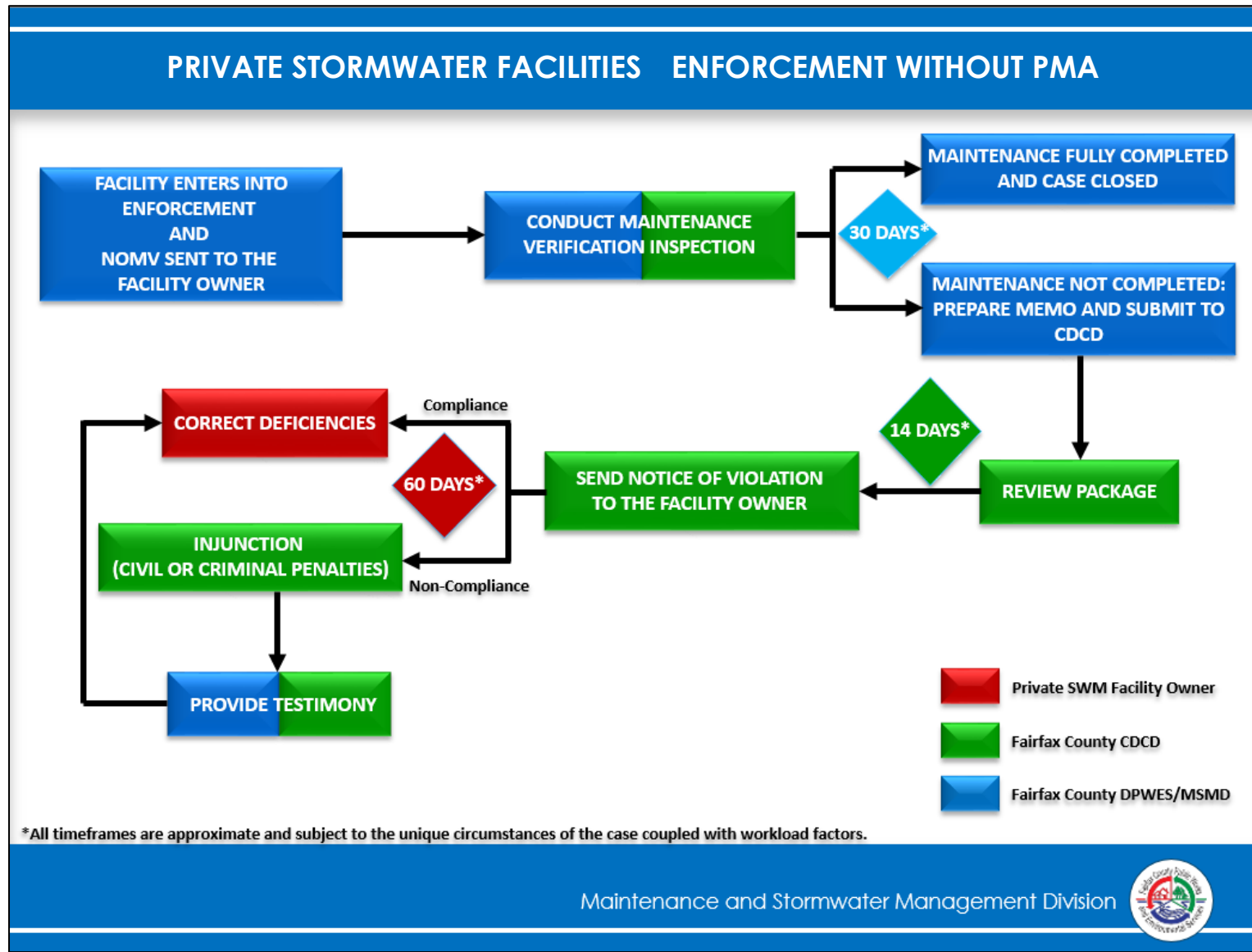
C-4: Private Stormwater Facilities-Inspection



C-5: Private Stormwater Facilities-Enforcement with PMA



C-6: Private Stormwater Facilities-Enforcement without PMA



# Field Inspections and Reporting Policies and Procedures

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January 2016  
Revised April 2017  
Revised April 2020  
Revised June 2021

Prepared by:



Fairfax County Department of Public Works and Environmental Services (DPWES)  
Maintenance and Stormwater Management Division (MSMD)  
10635 West Drive  
Fairfax, Virginia 22030

In consultation with:



GKY & Associates, Inc.  
4229 Lafayette Center Drive  
Suite 1850  
Chantilly, VA 20151

## Field Inspections and Reporting Policies and Procedures

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## Field Inspections and Reporting Policies and Procedures

### 1 Introduction

Field inspections and reporting compiles information about the operational health and maintenance needs for a stormwater control measure (SCM), i.e. facility(ies). SCMs may include a stormwater management facility or best management practice (BMP). The goal of this document is to provide a standardized approach to conducting field inspections and reporting to ensure consistency amongst all inspectors and contractors.

The field inspection and reporting task has two main purposes:

1. To record the current condition of the facility as compared to the design condition, and
2. To report that condition clearly to the facility owner, either public or private.

Please note that public facility inspections may also require taking measurements of specific maintenance items and preparing a scope of work narrative. Those items are discussed in the Field Measurements and Work Order Preparation guide.

#### 1.1 Time Estimates

The following time estimates may be considered as averages for use in generating estimates for field inspection tasks (i.e., preparation time, field time requirements per facility type, and reporting and submittal); individual facilities may take more or less time than what is noted here.

*Table 1a-Time estimates for Public Facility Field Inspections and Reporting*

In Office Prep Time		
Maintenance Responsibility		Prep Time Estimate (per facility)
Public Facilities		10 min.
Field Time		
Facility Type		Field Time Estimate (person-hours) <sup>1</sup>
AS	Amended Soil	1.5
BR	Bioretention Area	2.0
CS	Cistern	1.5
FTW	Floating Treatment Wetland	2.0
DP	Regional Dry Pond	3.5
	Non-Regional Dry Pond	3.5
GR	Green Roof	2.0
MB	Manufactured BMP	2.5
OS	Open Space Areas	2.0
PL	Parking Lot Detention	2.0
PP	Permeable Pavement	2.0
RF	Reforestation	2.0
RT	Rooftop Detention	3.0
SF	Sand Filter	2.5
TF	Tree Filter	2.0
TR	Infiltration Trench	2.0
UG	Underground Storage/Detention	2.5
VS	Vegetated Swale	2.0
WL	Constructed Wetland	3.0
WP	Wet Pond	4.0
WS	Wet Swales	2.0
Reporting and Submittal Time		
Maintenance Responsibility		Reporting and Submittal Time Estimate (per facility) <sup>2</sup>
Public Facilities		0.5 - 1 hr.

## Field Inspections and Reporting Policies and Procedures

<sup>1</sup> This time includes time to perform the inspection plus 0.5 hours per facility to QC the actual inspection results.

<sup>2</sup> For ponds, the one hour includes 0.5 hours to develop the report and 0.5 hours to QC the report; for non-ponds, the 0.5 hours includes 0.25 hours to develop the report and 0.25 hours to QC the report.

*Table 1b-Time estimates for Private Facility Field Inspections and Reporting*

In Office Prep Time		
Maintenance Responsibility		Prep Time Estimate (per facility)
Private Facilities		10 min.
Field Time		
Facility Type		Field Time Estimate (person-hours) <sup>1</sup>
BR	Bioretention Area	2.5
CS	Cistern	2.0
DP	Regional Dry Pond	3.0
	Non-Regional Dry Pond	3.0
GR	Green Roof	2.5
MB	Manufactured BMP	3.0
PL	Parking Lot	2.5
PP	Permeable Pavement	2.5
RF	Reforestation	2.5
RT	Rooftop	3.5
SF	Sand Filter	3.0
TF	Tree Filter	2.5
TR	Infiltration Trench	2.5
UG	Underground Detention	3.0
VF	Vegetated Filter Strip	2.5
VS	Vegetated Swale	2.5
WL	Constructed Wetland	3.5
WP	Wet Pond	3.5
Reporting and Submittal Time		
Maintenance Responsibility		Reporting and Submittal Time Estimate (per facility) <sup>2</sup>
Private Facilities		3 hours

<sup>1</sup> This time includes time to perform the inspection plus 0.5 hours per facility to QC the actual inspection results.

<sup>2</sup> The three hours includes 2.5 hours to develop the report and 0.5 hour to QC the report. Includes creating the envelope and postal tracking material.

## 2 Field Equipment and Documentation

The following tables outline recommended field equipment, safety related equipment, and field documentation necessary for conducting inspections of facilities. Though not intended to be all-inclusive or limiting, these lists may be used as a reference when assembling an inspection 'field kit'.

The following field equipment is recommended for conducting inspections of facilities:

Table 2-General Field Equipment

Field Equipment	Qty / Team	Purpose
Digital camera (with flash and timer)	1	Document facility conditions, potential maintenance issues and the inspection process
Extra batteries for digital camera	2+ sets	Replacement for depleted batteries
Telescoping monopole (6')	1	Inspect interior of underground facilities, riser structures and other stormwater structures
Painter's pole with camera adapter (16')	1	Inspect interior of deep underground facilities and stormwater structures, as well as large riser structures
Manhole hook and/or magnetic manhole puller	1	Remove manhole covers
Crowbar (prybar)	1	Assist in removing large manhole covers
3 lb. hammer	1	Loosen stuck manhole covers
Bilco door key	1	Open Bilco access doors
Flat Head screwdriver	1	Remove Bilco door screws
Socket set with ratchet	1	Remove non-standard Bilco door screws and bolts on access doors
Channel Locks (Large)	1	Open observation / cleanout wells, and assists in opening Bilco access doors
Fiberglass probing rod	1	Determine the presence (or absence) of subsurface gravel, especially for soil-topped trenches
Tape measure (25')	1	Confirm facility dimensions (overall size, orifice/pipe diameters, etc.) and measure areas of maintenance concern (erosion, bare spots)
Open reel tape measure (100')	1	
Flash light with extra batteries	1	Illuminate interior of underground facilities and stormwater structures
Machete (optional)	1	Clear vegetation to permit facility access
Ladder (for some rooftops)	1	Reaching rooftops externally
Writing utensils (pens suggested)	2-3	Record facility conditions, potential maintenance issues and document inspection process
Clipboard	1	
Flagging tape	2 rolls	Clearly identify maintenance issues and areas of concern (bare spots, erosion, potential hazards, etc.)
Survey flags	50	
Wood survey stakes	20	
GPS navigation device, or GPS-enabled smartphone	1	Assist with navigation and the location of facilities

The safety equipment contained in Table 3 below is recommended for conducting inspections of facilities. Additional information on safety equipment and procedures can be found in Section 3 of this document.

## Field Inspections and Reporting Policies and Procedures

Table 3-Important Safety Equipment

Safety Equipment	Qty / Team	Purpose
Hard hats	1 / person	To be used when inspecting facilities in the vicinity of light construction activity, utility work or tree trimming
Steel toe boots	1 pair / person	Protect feet and toes from manhole lids; also slips, trips and falls
Class 3 high-visibility vests	1 / person	Visibility in high-traffic areas
Work gloves (optional)	1 pair / person	Protect hands from cuts/abrasions when opening manholes and other access doors, as well as insects
Traffic cones	2+	Cordon off areas surrounding facilities where vehicular traffic is a concern (i.e. parking lots, travel ways)
Insect repellent	1	Protect against ticks, mosquitos, flies and other insects encountered during field inspections
Tick-repellent clothing		
Sunscreen	1	Protect against sunburn
First aid kit	1	Emergency situations and addressing minor injuries
Fairfax County emergency services contact info	1	Contact information for use in the event of an emergency
Cellphone	1	Calling contractor office, MSMD, or emergency services

The documentation contained in Table 4 and Table 5 below outline the general and facility specific documents that should also be carried at all times while in the field.

Table 4-General Documentation

General Documentation	Qty / Team	Purpose
Fairfax County identification	1+	Identify inspectors when engaging property owners/managers and other citizens
Fairfax County vehicle, or 'Stormwater Inspection' vehicle magnet	1	Identify vehicles used for field inspections
Fairfax County MSMD business cards	50	Provide MSMD contact information to property owners/managers and other citizens upon request
Contractor 'Field Inspector' business cards (if applicable)	50	Provide contractor contact information to property owners/managers and other citizens upon request (if applicable)
Fairfax County MSMD pamphlets	50	Provide MSMD program information to property owners/managers and other citizens upon request
Generic pre-inspection letter (for privately-maintained facilities)	20	Inform property owners and tenants of our purposes on the site. The facility-specific pre-inspection letter should also be available in the inspection folder.
Blank forms for "Non-Entry Confined Space Photographic Assessment"	50	Document atmospheric testing at confined spaces. Use 1 form for each facility where confined spaces are opened, and remember <b>not</b> to bodily enter the confined space.

Observations made during field inspections are recorded using standard inspection forms developed for each type of facility. In order to conduct comprehensive facility inspections and complete these forms, it may be necessary to utilize documentation (including approved plan sets and previous inspection reports) obtained during the pre-inspection phase of the process outlined in the Pre-Inspection Research guide. Hard copy documentation obtained in Pre-Inspection Research should accompany inspection teams on all site visits.

## Field Inspections and Reporting Policies and Procedures

Table 5-Facility-Specific Documentation

Facility Specific Documentation	Qty / team	Purpose
Inspection folder	1 / facility	Prepared during Phase 1 for privately-maintained facilities, or following the steps below for publicly-maintained facilities
Facility inspection route map	1	Provide turn-by-turn directions to facilities scheduled for inspection each day

### 2.1 Public Facility Inspection Folders

Hard copy inspection folders for public facilities are for short-term use only, holding only the documentation needed by or generated by the inspector. Legal-size manila folders are recommended, in order to fit the legal-size inspection forms, with labels containing both site ID and facility ID. The following documents should be included in the hard copy inspection folders prior to going out for inspection:

- **Inspector-Plans.pdf and GIS.pdf.** These documents may be found in the Fixed\_References folder for each site. Both documents are generated as part of the public facility pre-inspection and should be available for every site. If they are not available, a GIS print may be made from ArcGIS for inspection purposes only, and individual plan sheets may be selected for printing from the plan scans that are available.
- **Infor-EAM™ Database Print.** A print of the facility's information from Infor-EAM™, including from the Infor-EAM™ Comments tab.
- **Inspection Form and Photo Log.** Inspection form and photo log templates may be found on the county server, *J:\STW\SWM\_Branch\_Assets\Main\Private\Templates\Inspection Forms*. There is a choice whether to use the linked inspection forms or copy the templates to a different location and process them as a batch. Please note that Infor-EAM™ comments, which can be very helpful, are not automatically shown on the linked inspection form.

For sites with multiple facilities, documents shared by those multiple facilities only need to be printed once and stored in any one of the facility folders taken out to the field that day.

## 3 Safety, Training, and Public Relations

Safety, proper training and good public relations are vital parts of stormwater fieldwork, including the inspections. Although they may not appear to contribute directly to the final report and submittal, these three items help ensure the safety of the inspectors and the cooperation of the public.

### 3.1 Safety

Field teams should be conscious of health and safety policies and procedures, and mindful of the potential hazards associated with the inspection of facilities. Field teams must consist of at least two people, for safety reasons. While this section offers a summary of the principal safety hazards that may be encountered in the field, other hazards do exist that are not listed here. In all cases inspectors should use common sense and strive to keep themselves and their partner(s) out of harm's way.

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### 3.2 Confined Spaces

**Confined spaces should not be physically entered for these inspections.** The inspectors should not enter any manholes, underground chambers, or pipes as part of this work, nor allow any part of their bodies to enter. Any confined space entry that may be required shall be performed by properly qualified and permitted county staff or contractor. Short training sessions are available online to help inspectors identify and avoid entering confined spaces; one example is at <https://www.hazmatschool.com/osha-confined-space-safety-training-1289/>.

Photographs may be taken in confined spaces by attaching the camera to a standard monopole or longer painter's pole with camera attachment .

### 3.3 Environmental Factors

During field activities inspectors may encounter the following environmental factors that pose health and safety issues:

**Ticks:** Ticks can transmit several serious illnesses such as Lyme disease. Tick-repellent spray and/or clothing is strongly recommended. Inspectors should also regularly check themselves for ticks and remove any that are found. Information is available online on tick identification, removal, and related disease symptoms and treatment, see <http://www.fairfaxcounty.gov/hd/westnile/lyme-disease.htm>.

**Spiders:** Black widow and other spiders have been found inside several facilities located throughout Fairfax County, including inside Bilco doors near the handles. Extra care, and the use of gloves and tools, should be used during the opening of manholes and Bilco doors.

**Insects:** Mosquitos and other insects may be encountered during field activities. Insect repellent is recommended to help prevent West Nile Virus.

**Snakes and other Wild Animals:** Copperheads and other species of poisonous snakes live in the wild in this area. Inspectors should keep an eye out during field activities and avoid contact with snakes and all other wild animals and seek medical attention in the case of any bites. Some wild mammals may carry rabies; information about rabies may be found at <https://www.fairfaxcounty.gov/health/rabies>.

**Unleashed Pets:** Always check for dogs and other pets before entering fenced yards. If pets are present, ask the owner to remove or leash the animal and do not enter until pets are secure. Use extra care upon entering and exiting properties to ensure that you do not leave a gate open or allow pets to escape.

**Poison Ivy:** Some people are highly allergic to poison ivy, which is a common weed found in Fairfax County. Any inspector who is allergic should know how to identify the plant and avoid contact with it.

### 3.4 Traffic Hazards

All team members must wear high-visibility (Class 3) vests at all times during inspections.

Many facilities are located in and under parking lots or near roadways. Cones, and the inspection vehicle itself, may be used to keep traffic away from parking lot manholes and Bilco doors. Inspectors must consider parking lot traffic patterns before setting up the cones, and avoid blocking the main drive aisles if traffic has no other way to go. Local shop managers can be helpful in advising on traffic patterns, sometimes suggesting coming in the early morning when the lot is less busy. When inspecting facilities near parking lots and roads, at least one of the team members should be on the lookout and ready to warn the others about traffic hazards. Facility inspections should not involve crossing multiple lanes of traffic, especially during high-traffic times and main arteries. If a facility is located in a dangerous area, consult with your supervisor and with MSMD staff for special instruction before proceeding with a possibly-hazardous inspection.



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### 3.5 Active Construction Zones

If the facility is located in an active construction zone, take a couple of overall photos and call your supervisor before proceeding. Most likely the site is under bond and will not be within the jurisdiction of MSMD until the project is completed and the bond is released.

### 3.6 Slip / Trip / Fall Hazards

Many facilities require inspectors to do multiple activities at once and traverse difficult terrain. Inspectors must be aware of their surroundings and the terrain. Step carefully, watching out for holes, steep slopes, uneven terrain, and other fall and trip hazards while performing inspections.

### 3.7 Lifting Technique

Many facilities require inspectors to remove manhole covers, open Bilco Doors, and lift other heavy items. All lifting of these items must be done with the legs, not the back. In addition, the use of a manhole hook and other tools should be considered to assist in the lifting process. It is important to remember to not place fingers or toes under the manhole lid or other heavy items at any time during the inspection.

### 3.8 Heat / Cold Stress

Stormwater inspections occur at all times throughout the year. Inspectors should be aware of the weather conditions and wear the proper work attire for the weather, taking into consideration the potential for sudden changes. Extreme heat or cold is dangerous; inspectors should limit the amount of time exposed to extreme temperatures, be sure to stay hydrated, and monitor their physical condition and that of their teammate(s).

### 3.9 Training

State regulations require at least one of the inspectors on an inspection team to be certified by the Virginia Department of Environmental Quality (DEQ) as a Stormwater Management Inspector. Taking the Virginia DEQ Inspector for Stormwater Management course is required to gain the eventual certification. MSMD annually offers its own inspection training geared specifically to this program.

### 3.10 Public Relations

Although not usually a safety hazard, public relations are extremely important. **Inspectors must remember that while in the field they are representatives of the County; courtesy and politeness are required.**

Upon arrival at each facility, the inspectors should check in with the owner or other on-site personnel whenever feasible and present their County provided credentials. Copies of the facility documents may be left with facility owners or managers if requested. If no one is available, leave business cards and a copy of the generic pre-inspection letter at the door and proceed with the inspection. **Note: For facilities with Private Maintenance Agreements (PMA), the inspectors are simply providing the owner/operator with notification of the inspection, not necessarily asking permission to perform the inspection. For facilities without a PMA or to access areas behind a “No Trespassing” sign, the inspection team shall gain permission to perform an inspection of the facility from a responsible person.** Take note of the person who gave permission to access. In both cases, if the owner objects or threatens the inspection team, leave the property and report the problem to your supervisor. The County has other ways of gaining access to the site; there is no need for the inspectors to put themselves at risk trying to force the issue. If assistance from a non-threatening owner is needed to access the

## Field Inspections and Reporting Policies and Procedures

facility, for example with moving equipment that may be parked over the access doors, be polite and courteous in requesting that assistance.

### 4 Inspection Procedure

Upon arriving at a given site, the field team should inspect each facility following the procedure outlined below:

1. Read the facility comments included in the Infor-EAM™ printout and provided in the inspection folder. The comments may include special site-specific notes regarding location of the facility on the property, access, ownership and/or maintenance notes.
2. Check in with the property owner, manager, or tenant.
  - a. Introduce yourselves as County representatives, inform them of the inspection and explain the purpose of the visit. Ask for permission to perform the inspection and take note of the person allowing access. If requested, inspectors should provide a copy of the pre-inspection letter and business cards with MSMD contact information, as well as contractor business cards if applicable.
  - b. **Fairfax County Contractor identification should be plainly displayed at all times during the inspection.** All inspection equipment (e.g., manhole hook, crowbar, etc.) should remain in the vehicle until after interaction with property owners, property managers, residents, or security. Inspection teams should be mindful of interaction with the general public and should be polite, courteous and professional at all times.
  - c. If there is objection from property owners, property managers, residents or security, inspectors should leave the property, record details of the interaction and report the problem to their supervisor and MSMD.
  - d. Check-in is required for school sites, child care centers, and assisted living communities. Check-out may also be required, depending on the site.
    - i. Fairfax County Public Schools (FCPS) requires **each** inspector to enter through Door #1 and proceed to the main office. There, they should request the “Maintenance Log” and sign in with proper ID. Inspection staff may need the assistance of FCPS staff to unlock gates or other points of entry. If so, they should request their assistance at that time. Prior to leaving the school, inspectors should proceed back to the main office to sign out of the Maintenance Log.
  - e. Always knock on the door or ring the doorbell for private residential lot inspections. If no one is available, inspectors should leave the generic pre-inspection letter and business cards at the door and proceed with the inspection only if a PMA exists and there is not a posted “No Trespassing” sign visible.
  - f. High-security sites may require advance notification and background checks. Those sites may also prohibit photography at the site; in such cases they usually provide their own photographer and send the pictures to the inspectors digitally after the inspection. Special site security arrangements should be noted in the Infor-EAM™ access comments.
  - g. For privately-maintained facilities, attempt to confirm the mailing address with the owner or property manager, either from the Infor-EAM™ printout or the signed pre-inspection letter. Address verification is especially important in cases when the mailing address was not successfully identified during the pre-inspection research.
3. Visually locate the facility, checking for any hazards or conditions that prohibit full access to the facility. Use the plan sheets and aerial imagery in the inspection folder to help identify the facility.
  - a. Check for overall facility accessibility.
    - i. If the facility is inaccessible due to overgrown vegetation, locked gates, parked cars, or is otherwise unable to be reached, photograph the obstacles and record them on the inspection form.
    - ii. The owner or other on-site personnel, if available, may be able to help open gates or move parked cars.
  - b. Survey the surrounding area for any potential hazards, including those mentioned in Section 3 - Safety.
    - i. Proceed with the inspection to the extent that it is safe to do so. If conditions exist such that the team is not confident an inspection can be conducted without risk of injury, fully document and photograph those conditions and end the inspection.

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- ii. Any condition that presents an active hazard to the public should be immediately communicated to MSMD so that the hazard may be remedied as soon as practicable. Examples include missing manhole covers and dams that appear to be actively failing. In addition, the inspection team should mark off the area as best as possible using stakes and flagging to discourage entry by the public.
    - iii. If the facility is located in an active construction zone, take a couple of overall photos and then call your supervisor before proceeding. Construction activities usually lead to research as discussed in Anomalies section of the Pre-Inspection Research SOP.
    - iv. Potentially hazardous conditions, even if they do not prevent inspection at this time, should be added either to the Access Comments field or to the Comments tab in Infor-EAM™.
  - c. Fully document any and all conditions that prevent full inspection of the facility.
4. Complete required documentation
  - a. Document inspectors' last names, inspection date, and weather information on the form.
  - b. Complete a rough (not-to-scale, but legible) sketch that identifies the pertinent components of the facility.
  - c. Photograph the facility sign (for publicly-maintained facilities) or the inspection form. Write that photo number down as the first photo in the photo log; it serves as an easy way to sort photos by facility later.
5. Continue taking photos of the facility and completing the Photo Log, as discussed further in the Section 4.2.
6. Note and score any maintenance items on the inspection form.
7. Take any measurements required by the inspection form, such as inflow pipe diameters or the sizes of detention device openings. These required measurements vary by facility type; follow what is required for each particular form.
8. For public facilities, take any additional measurements needed to generate the work order, as specified in the Field Measurements and Work Order Preparation document.
9. Make sure all documents are complete before moving on to the next facility.

### 4.1 Inspection Form

MSMD has created an inspection form for each facility type, with unique sections and maintenance items. A sample inspection form for bioretention is included in Section 7 of this document. Inspection form templates for each facility type can be found at *J:\STW\SWM\_Branch\_Assets\Main\Private\Templates\Inspection Forms*.

All inspection forms include the following sections:

#### **Header**

The form Header holds the site ID, facility ID, plan name, address, and other identifying information. Inspectors must add their last name, certification information and the inspection date.

#### **Facility Functionality**

The Facility Functionality rating scores the facility as a whole as either functional (with or without maintenance required, as indicated by the score totals) or as non-functional.

#### **Score Totals**

The Score Total boxes are for counting how many maintenance items were given each score. The Score Totals are filled out last, after quality control of the inspection has been performed in the office.

#### **Notes / Specifications**

The Notes / Specifications at the top of the form may be filled out in the office before the inspection to include information from the Infor-EAM™ Comments tab or any other information identified as valuable for the inspection team.

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### Signs

The Signs sections is intended for publicly-maintained facilities, especially ponds, which should have a warning sign and a facility sign identifying the facility ID, watershed, and phone number for the public to call with questions or complaints. This section may be skipped or marked N/A for privately-maintained facilities.

### Weather Conditions

Weather Conditions, listed in a section near the top of the form, are important for judging whether water ponding within the facility is indicative of a blockage or other problem, or is just the temporary result of recent rainfall.

### Maintenance Items

Facility-specific Maintenance Items, organized into sections based on location within that type of facility. Maintenance item scores range from **1** (①, severe, high priority) to **3** (③, relatively minor, lower priority) with a ☉ being used for items that do not currently need maintenance, i.e. "Continue Routine Maintenance". Some maintenance items may be only ① or ☉; for example either the well cap is missing (①) or it is not (☉).

### Other

Non-Location-Specific "Other" items include problems that may be noted with Encroachments, Facility Modifications, Mosquito Habitat, or any Evidence of a suspect flow that may indicate a Possible Illicit Discharge. Information is included on the form to remind the inspectors who to **contact if a possible illicit discharge is observed**.

### Inspector Comments

Inspector Comments may be added at the bottom of the sheet or for specific maintenance items. **More text is better than not enough**. Anything that may be questioned later should be clarified further on the inspection form. Space for writing is available for all maintenance items, and its use is encouraged.

### General Notes Regarding Form Completion:

It should be noted that there will be times that non-standard maintenance problems that don't fit elsewhere, general access notes, information provided by the owner while on-site, and anything else of interest should be written in the generic Inspector Comments box at the bottom of the form.

Not all form sections apply to all facilities of that type; if a section does not apply, then you may write "N/A" in the comments for that section. Otherwise every maintenance item should be marked either with a score number or with the ☉.

Inflows, roof drains, and scuppers have **multiple columns** for their maintenance items. Because each facility is likely to have more than one inflow, or for a rooftop more than one roof drain, these columns allow for the individual components to be scored separately. Space is also provided for each inflow's pipe size and type, to help identify the inflow from just the inspection form without needing an orientation sketch.

## 4.2 Photo Log

A photo log should be completed in the field for each facility. Photo numbers from the camera and corresponding to the file names for the JPG photos are to be written on the left side of the photo log. In addition, a caption or description of each photo; location of the photo; direction the camera is pointing (North (N), South (S), East (E), West (W), upstream (U/S), downstream (D/S), toward the orifice, etc.); and any maintenance problems visible in that photo should be documented. A sketch of the facility should be drawn in the area at the bottom of the photo log.

Structures in the sketch should be labeled based on the structure numbers shown on the plans, if that can be done

## Field Inspections and Reporting Policies and Procedures

conveniently, or given other identifying labels by the inspectors. For example, the inspectors may label Roof Drain 1 (RD1), Manhole 2 (MH2), Bilco 3, and Inflow 4 on the sketch. Structure labeling by function (e.g., control structure, outfall, riser, etc.) is also helpful. Overland inflows should also be included in the sketch, as non-facility-specific maintenance items. These may include an animal hole on the dam embankment or sediment on only part of the pond floor; items whose location is important but not confined to specific structure point.

### General guidelines, for all facility types...

- Inspectors should take an 'overall' photo of the facility. This photo should show the extent of the facility in perspective to the residence(s) or building(s) located on the property. For large facilities, taking occasional overall photos between closer photos can help orient the owner when they later read the report. Another "overall" photo may be taken last, looking in the opposite direction as the initial overall photo.
- Inspect all facility components. Following the sections on the inspection form may be helpful to ensure that all components are reviewed.
- Each deficiency noted on the inspection form should be documented by at least one supporting photo.
- Any access problems, even if they are not considered maintenance deficiencies, also need to be documented by one or more photos to adequately show the problem.
- For complex facilities, consider labeling photo numbers and the direction the photo was taken in the facility sketch. Photo log captions should describe any identified issues, any problem(s) with the structure, and the direction/orientation of the photo, where appropriate.

Following are lists of the items that shall be photographed at each type of facility. The lists should serve as a starting point and are not intended to be all-inclusive as additional photos may be useful in many cases.

### BR: Bioretention

- Access.
- Overall view(s), preferably from multiple vantage points.
- Close-up of mulch condition.
- Count the plants and compare to the landscape plan.
- Check the ponding depth and area; photograph the overflow berm.
- Observation well(s) or cleanout(s): overall and looking inside. (Note if the cap cannot be removed.)
- All inflows.
- Control structure / outfall structure, if specified in the plans.

### DP / WP: Ponds

- Access.
- Overall view(s), preferably from multiple vantage points.
- Riser / Control structure: overall, orifice and lower trash rack close-ups, looking down into the structure, U/S toward the low-flow orifice, and D/S along the PSP, as well as any other problems noted directly around the structure.
- Dam Embankment: overall views of the entire dam, and closer photos of any problems such as erosion or animal holes.
- Emergency Spillway.
- Outfall: as seen from the top of the dam embankment, structure exterior, inside the outfall looking along the PSP, and D/S from the outfall. Get a close-up of any undermining problems.
- Pond trickle ditch and any sediment build-up on the pond floor.
- All inflows, both piped and overland. Take an overall photo of each inflow looking U/S, inside the pipe, and D/S.

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### MB: Manufactured BMPs

Manufactured BMP inspections will vary depending on the exact facility type. Refer to the plans or to information from the manufacturer for more details about each specific facility.

- Access.
- Overall view(s).
- Open any other available access ports to the underground chamber or detention pipes: photograph overall, down, U/S, D/S.
- Outfall structure: overall, down, U/S, D/S.

### PP: Permeable Pavement

- Access.
- Overall view(s).
- Photograph the infiltration test infiltration (5-gallon bucket of water poured over facility).
- Any problems noted.

### PL: Parking Lot Detention

- Access.
- Overall view(s).
- Control structure overall.
- Control structure close-up, emphasizing the control orifice, weir, or other flow control device.
- Looking inside the control structure and along all attached underground pipes.
- Outfall structure: overall, down, U/S, D/S.

### RT: Rooftop Detention

- Access.
- Overall view(s).
- Each roof drain. While overall and down-the-pipe photos may occasionally be useful for roof drains, the most important photo for each roof drain is a close-up of the detention device. The picture is clearer if the debris cage can be temporarily removed.
- Each scupper, viewed from near the roof surface to see scupper height off the surface. A tape measure may be included in these photos.

### SF: Sand Filters

- Access.
- Overall view(s).
- Open any available access ports: photograph overall, down, U/S, D/S.
  - Note the chamber where each photo is taken: sedimentation chamber, filter chamber, or clearwell.
- Dewatering drain in the clearwell chamber; it should be closed.
- Outfall structure: overall, down, U/S, D/S.

### TF: Tree Filters

- Access.
- Overall view(s).
- Inside the throat. Trash and debris should be clearly documented on the inspection form; they do not always show up well in the photos.
- Inside the top grate.



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- Overflow structure / outfall: overall, down, U/S, D/S.

### TR: Trenches

This list applies to most infiltration trench facilities. A trench facility with larger perforated pipes and no surface gravel may be inspected as an UG (Underground Detention) facility, discussed next. Such underground infiltration trenches are sometimes abbreviated to as “TRUG” facilities in County documentation, as they combine aspects of both underground detention and gravel trench infiltration. For surface trenches and small on-site residential trenches:

- Access.
- Overall view(s).
- Any surface gravel; scratch or bore to check for sediment build-up below the top layer of gravel.
- Test for gravel below grassed surfaces using the probing rod; photograph this and note the depth at which gravel was detected.
- Observation well(s) or cleanout(s): overall and looking inside. (Note if the cap cannot be removed.)
  
- For trenches on residential lots; photograph all easily-accessible roof downspouts. Often the trench is designed to receive flow underground through perforated extensions of the roof downspouts; if the downspouts exit on the ground surface then the trench may not be functioning properly. Compare each facility to its individual design plans.
- Control structure and/or outfall structure: photograph fully if specified on plans.

### UG: Underground Detention

- Access.
- Overall view(s).
- Control structure, both the U/S and D/S sides. Get photos overall, looking down, upstream, and downstream, from both sides of the weir wall, if one exists. Especially attempt a close-up of the low-flow orifice, usually at the base of the weir wall.
- Open any other available access ports to the underground chamber or detention pipes: photograph overall, down, U/S, D/S.
- Outfall structure: overall, down, U/S, D/S.

### VS: Vegetated Swales

- Access.
- Overall view(s).
- Swale, looking U/S and D/S.
- Check dams, as specified on plans.
- Curb cuts or other inflows.
- Plantings.
- Outfall and control structures, if specified.

### WL: Constructed Wetlands

- All items listed for ponds.
- Photograph and note wetland vegetation as compared to the facility planting plan and detail enhanced maintenance features (micropools, forebays, etc.) within the pond floor.

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### 4.3 Possible Illicit Discharges / Public Hazards

While in the field inspectors may notice indication of possible illicit discharges. Illicit discharges are flows that look or smell unusual, oil or grease stains, or human activities such as dumping. If the inspectors notice something indicative of an illicit discharge, or something otherwise unusual that they think warrants special investigation, then they should use the online reporting form (<https://fairfaxcounty-639180.workflowcloud.com/forms/fc87b0ec-aaa6-4a34-b06d-a88398672eb2>) to notify the Stormwater Planning Division. They may also be notified via email at [DPWESSTWStormwaterPollution@fairfaxcounty.gov](mailto:DPWESSTWStormwaterPollution@fairfaxcounty.gov) from the field to report what they see.

The inspectors may also notice conditions that represent public safety hazards: actively failing dam embankments, fall hazards, or missing/loose manhole covers. **Any condition that presents an active hazard to the public should be immediately phoned in to MSMD.** The area should also be marked off with stakes and flagging, if possible.

### 4.4 Field Documentation

The inspector should always plan to spend a few minutes per facility at the end of the day to review documentation for possible omissions.

At the completion of each field day the inspectors should download and process the photos for all facilities:

1. Download the photos from the camera to your computer.
2. Rotate and lighten the photos as needed.
  - a. All photos should appear upright on the computer screen.
  - b. Proper lightening using photo-editing software can bring out a lot of details that may not otherwise be visible in under-lit underground photos.
3. Sort the photos by site and facility ID.

Then the inspectors should check and complete the documentation for each facility as follows:

1. Go through the photos for each facility, comparing them to the photo log.
  - a. Delete blank or duplicate photos, updating the photo log as needed.
  - b. Look for deficiencies that were not visible or missed in the field, such as spalling on the interior of structures or pipe separation on the inside of a pipe, scoring them on the inspection form accordingly.
2. Review all marked inspection items, checking that the photo numbers on the inspection form are correct.
3. Count the number of deficiencies scored "1", "2", and "3" and fill in the appropriate space(s) at the top of the inspection form.
4. Score the facility as a whole as "Functional" or "Non-Functional."

## 5 Public Report Submittal

The public facility report is intended to provide the MSMD with an understanding of maintenance items for each facility. The following submittal items are required for publicly owned and operated facility inspections:

- Electronic document submittal on the J:\ drive.
- Infor-EAM™ updates.
- Work order scope of work narrative.

Refer to the Field Measurements and Work Order Preparation document for more detailed information on developing and delivering the work order narrative. The other public submittal components are detailed below. No hardcopy submittal is required for regular inspections of publicly-maintained facilities.

### 5.1 Public Facility Electronic documents

The electronic documents, listed below, should be grouped into a folder named by the facility ID and the date. For example, the inspection for 1492DP from 4/15/2013 would be filed in a folder named 1492DP\_2013-04-15\_Inspection. The folder will *eventually* be saved under the Photos & Inspections folder for that facility, as shown below in Figure 1, but for submittal should be filed in the photo dropbox, J:\STW\SWM\_Branch\_Assets\Main\Public\Inspections\_DropBox.

- Scanned inspection form.
- Scanned photo log.
- JPG photo files.

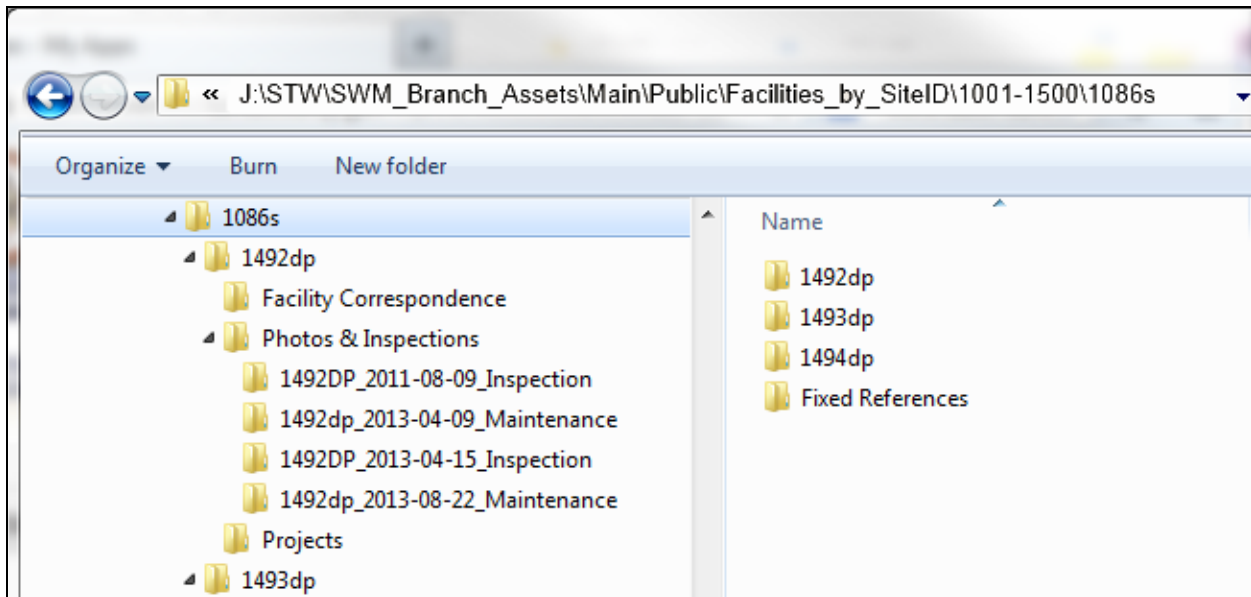


Figure 1-Illustration of folder naming conventions for public inspections, using facility 1086S / 1492DP as an example.

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### 5.2 EAM updates

Update the following fields in Infor-EAM™ as detailed below for each inspected facility:

- Last Inspection Date: date of the inspection.
- Previous Inspection: cut the value that was in the Last Inspection Date field and paste here.
- Inspection Team: county inspectors enter their initials; contractors enter their company's initials.

Occasionally the Infor-EAM™ Comments tab or the Access Comments field may need to be updated as well, based on special conditions that the inspectors find in the field.

## 6 Private Inspection Reporting

Report development is a lengthier process for the privately owned and operated facilities than for the public facilities. The private facility report is intended to make the maintenance issues clearly understandable to a layperson, the facility owner, and at the same time adequately convey to that person that maintenance of that facility is required. The most important parts of the private inspection report are the condition assessment report (CAR) and the related photos with captions, as these are where the inspection results are directly shown. Other documents will be attached later to fill out the report; the entire completed bundle must be consistent in conveying the facility's maintenance needs to the owner.

### 6.1 Photos, with Orientation Sketch and Captions

A photo log for each facility inspected must be prepared and submitted with the reports and includes a facility sketch and applicable photos as described above in Section 4.2 - 4.2 Photo **LOG**. This photo log is the same for both public and private inspections. However, the photo log for private inspections is not sent to the private facility owner. Instead, the photos with their captions are presented in a clearly readable format that will help guide the owner to a clear understanding of the facility layout and maintenance items.

A sketch and photos taken of the facility are inserted into a Microsoft PowerPoint template which is found at *J:\STWSWM\_Branch\_Assets\Main\Private\Templates\Standard Photos Template with sketch.ppt*. Copy the template from the location above and paste it into the facility specific folder and edit it there; **do not make changes directly to the template**. The final document should be named with the naming convention: SiteID\_FacilityID\_PHOTOS.ppt.

The template is formatted to allow for a facility sketch on the first page and four (4) photos to fit on each subsequent page with a caption for each photo as depicted below in Figure 0- and Figure 3-. Upon completing this activity the following should be modified for each facility:

- Update the header on each slide to show the correct site ID, facility ID, and inspection date (using Find / Replace All can help with ensuring that all headers throughout the document are updated).
- Create or insert an Orientation Sketch of the facility on the first page of the PowerPoint.
- Add a caption to each photo providing a complete description of each photograph's subject, the general direction in which the photo was taken, and a description of any observed deficiencies. Deficiencies may be circled or otherwise highlighted on the photos if they are not easily visible to a layperson.

As provided above, the first page of the PowerPoint template is reserved for the facility sketch. The sketch must be easily-read, with enough surrounding details (e.g., buildings, roads, parking lots) to orient the reader. All facility components referred to in the later photo captions must be so labeled on the sketch. The facility itself must also be clearly outlined and labeled. The sketch format is flexible; popular options range from using the sketch tools within PowerPoint to using GIS points and labels with aerial Pictometry imagery as the background. For some small facilities you may even use one of the inspection overall photos, if it shows the whole facility and the facility components are easily visible.

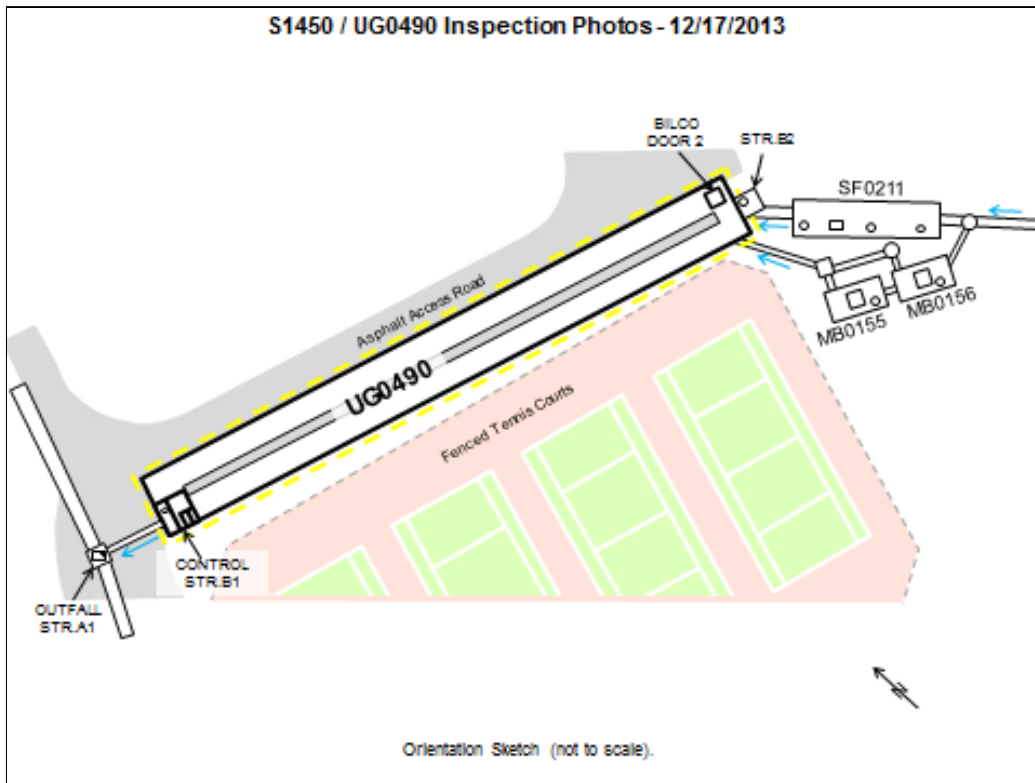


Figure 0-Orientation sketch example generated with the PowerPoint sketch tools.

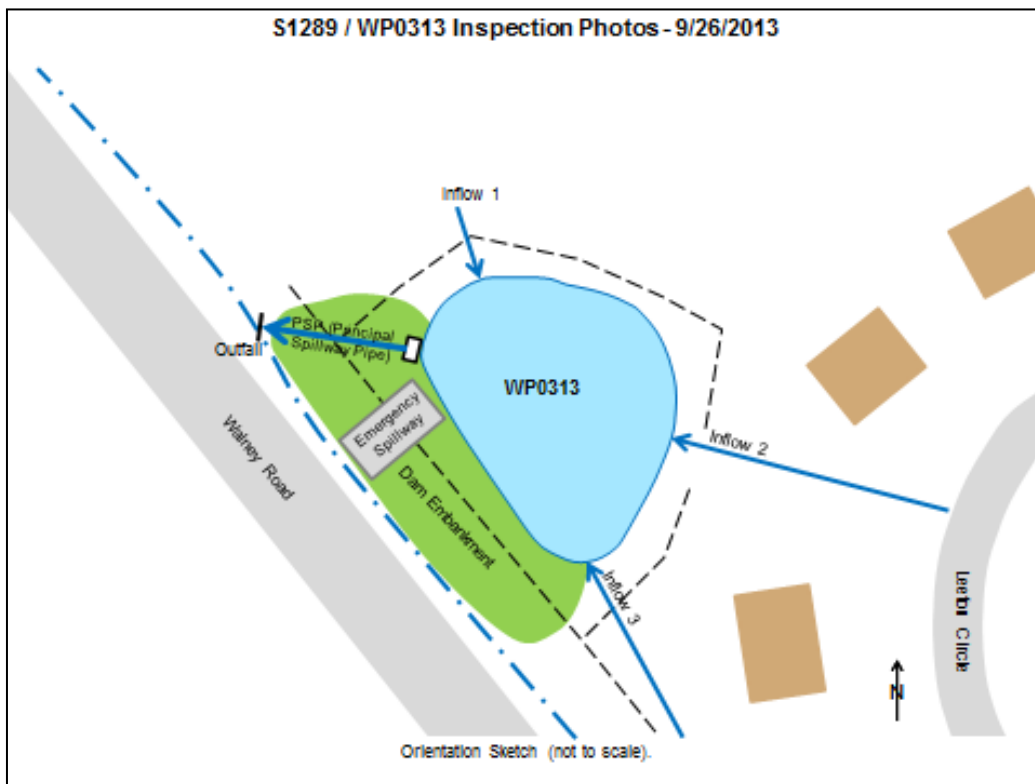


Figure 3-Orientation sketch example generated with the PowerPoint sketch tools.



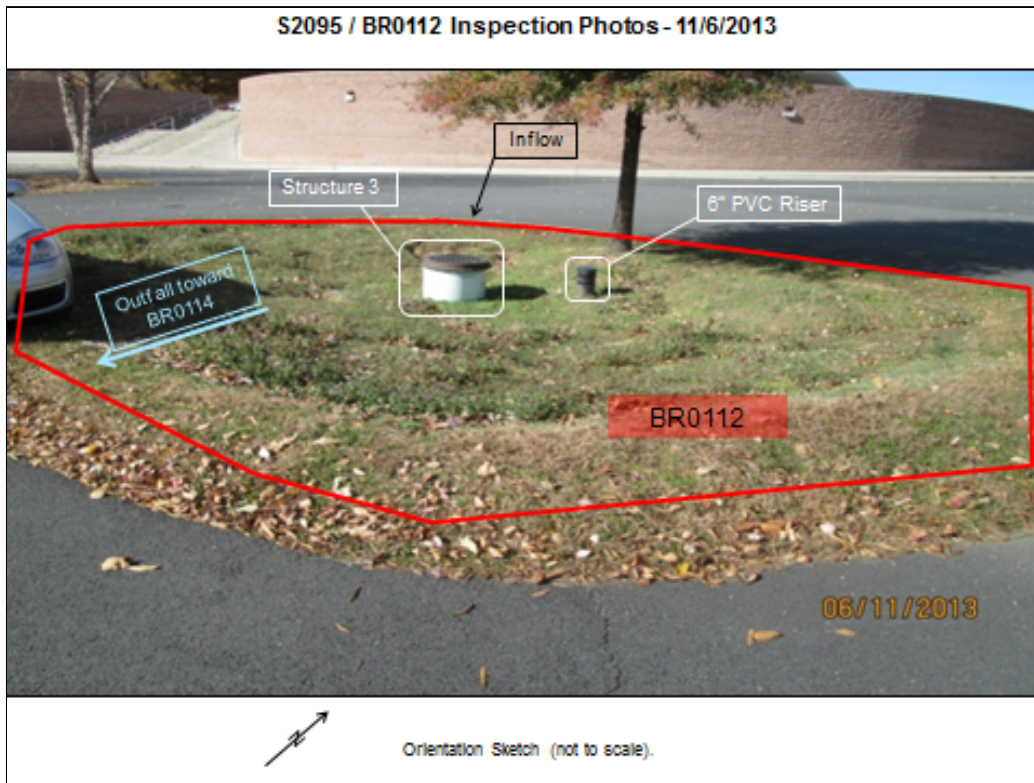


Figure 4-Orientation sketch example using an overall photo of the facility.

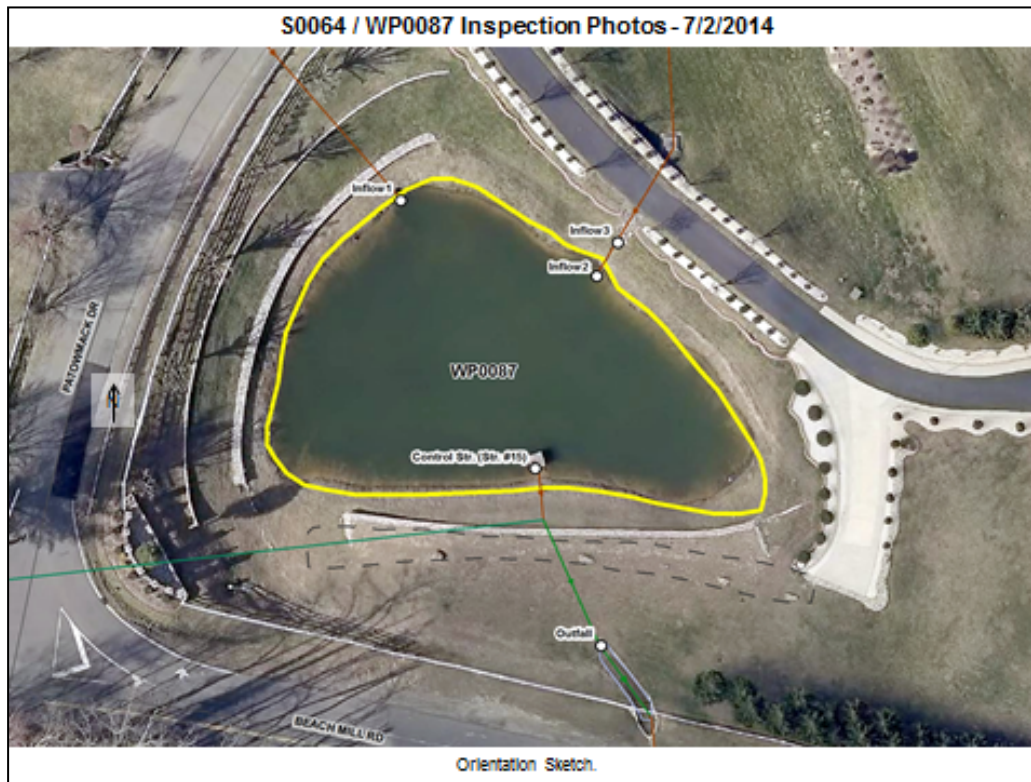


Figure 1-Orientation sketch example generated from GIS.



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Here is an example layout showing the standard template of four photos with captions, slide header, and optional highlighting and labeling added.

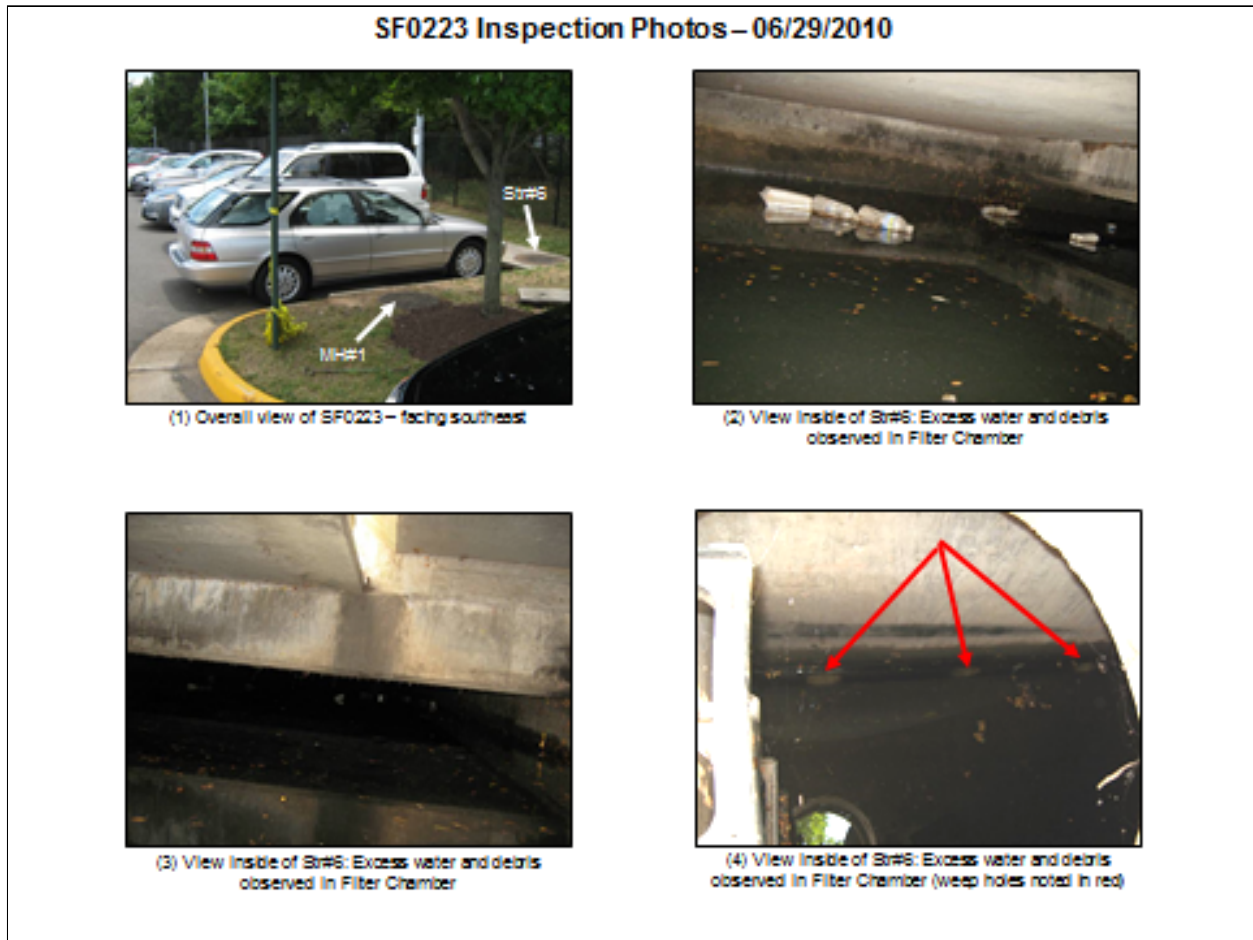


Figure 2-Example PowerPoint PHOTOS slide with captions.

### 6.2 Condition Assessment Report (CAR)

Standard CAR forms (based on the facility type) can be found at *J:\STWSWM\_Branch\_Assets\Main\Private\Templates\Condition Assessment Reports*. Each facility type has its own CAR template. Follow the same procedure as for the PHOTOS.ppt template and copy and paste the template to the facility's folder and edit it there. Take care not to make changes to the original template. The final document should be named with the following naming convention: SiteID\_FacilityID\_CAR.docx. An example completed CAR is shown in Figure 3.



For each facility the following should be completed in the CAR:

1. Fill out the site ID and facility ID at the top each page.
2. For items that require maintenance within each section ...
  - a. Check the box by double-clicking. (NOTE: Hidden text may be viewed using the Show/Hide (¶) button on the toolbar. When Show All is turned on then the hidden text will appear with a dotted underline. Select the bullet-point / paragraph that you want to un-hide, and open the Font dialog box, either from the toolbar or by pressing Control + D. Uncheck the 'Hidden' box to un-hide that text and make it visible for printing.)

## Field Inspections and Reporting Policies and Procedures

- b. Add the photo number from the PowerPoint presentation (not the JPG number from the photo log), either with italics or with yellow highlighting to make it stand out more. For example: **See photo #2.**
  - c. Add any additional text needed to clarify the problem. Custom text added by the inspectors should be made Italics to differentiate it from standard CAR template text. For example, for missing plants: ***Three (3) trees were specified in the approved facility plan but only one (1) was found on site.***
  - d. Bold the whole item.
3. Some older CAR templates include a “no additional maintenance is needed” item within each section. Check this box if it applies for the section, but do not bold it.
  4. For the first-page summary section, check the boxes summarizing whether maintenance is needed or not for each facility section.
  5. Within the overall facility summary, check the box indicating whether the facility is functional or not and whether maintenance is needed. Bold that entire checked item.

All maintenance items noted on the inspection form should be either included in the CAR or noted as “minor” problems in the photo captions. For example, if some sediment was noted but it was not judged by the inspectors to require cleaning, they may choose to include it in the photo caption: “Minor sediment build-up was noted on some portions of the pond floor.”

<div style="text-align: center;">   </div> <p style="text-align: center;"><b>MANUFACTURED BMP CONDITION ASSESSMENT REPORT (CAR)</b></p> <hr/> <p><b>Site ID / Facility ID:</b></p> <p><input type="checkbox"/> No deficiencies were noted during the assessment. Thank you for maintaining your stormwater management facility in good working order. Please continue routine maintenance.</p> <p><input type="checkbox"/> Maintenance is recommended to <u>ensure continued functionality</u> of the facility. Failure to perform timely maintenance may lead to greater expense in the future.</p> <p><input type="checkbox"/> Immediate maintenance is required to <u>restore proper functionality</u> of the facility. Failure to comply will result in a Notice of Violation (Article 8 of the Stormwater Management Ordinance).</p> <p><b>Summary of Condition Assessment</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center; width: 15%;">Continue Routine Maintenance</td> <td style="text-align: center; width: 15%; color: red;">Deficiencies Noted</td> <td style="width: 70%;"></td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Facility Overall</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Manufactured BMP Facility</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Outfall Structure</td> </tr> </table> <p style="font-size: small; margin-top: 20px;">This stormwater management Condition Assessment Report (CAR) offers a "point-in-time" representation of observed conditions at the facility and is not intended to provide any information regarding the functional integrity of the structure nor provide warranty as to present or future structure condition or performance. The CAR is not meant to replace or supersede any specific recommendation offered by a qualified professional.</p>	Continue Routine Maintenance	Deficiencies Noted		<input type="checkbox"/>	<input type="checkbox"/>	Facility Overall	<input type="checkbox"/>	<input type="checkbox"/>	Manufactured BMP Facility	<input type="checkbox"/>	<input type="checkbox"/>	Outfall Structure	<p style="font-size: small;">SITE ID / FACILITY ID:</p> <p style="text-align: center;"><b>MANUFACTURED BMP CONDITION ASSESSMENT REPORT (CAR)</b></p> <hr/> <p><b>Facility Overall:</b></p> <p><input type="checkbox"/> Not Fully Accessible</p> <p><input type="checkbox"/> Signs</p> <p><input type="checkbox"/> Maintenance Records</p> <p><b>Manufactured BMP Facility:</b></p> <p><input type="checkbox"/> Not Fully Accessible</p> <p><input type="checkbox"/> Missing / Not Found / Non-Functional</p> <p><input type="checkbox"/> Blockage</p> <p><input type="checkbox"/> Damage / Deterioration</p> <p><input type="checkbox"/> Trash / Debris / Sediment</p> <p><input type="checkbox"/> Inconsistent with Plans</p> <p><input type="checkbox"/> Other</p> <p><b>Outfall Structure:</b></p> <p><input type="checkbox"/> Not Fully Accessible</p> <p><input type="checkbox"/> Blockage</p> <p><input type="checkbox"/> Damage / Deterioration</p> <p><input type="checkbox"/> Trash / Debris / Sediment</p> <p><input type="checkbox"/> Vegetation</p> <p><input type="checkbox"/> Erosion / Bare Spots</p> <p><input type="checkbox"/> Inconsistent with Plans</p> <p><input type="checkbox"/> Other</p> <p style="text-align: right; font-size: small;">Page 2 of 2</p>
Continue Routine Maintenance	Deficiencies Noted												
<input type="checkbox"/>	<input type="checkbox"/>	Facility Overall											
<input type="checkbox"/>	<input type="checkbox"/>	Manufactured BMP Facility											
<input type="checkbox"/>	<input type="checkbox"/>	Outfall Structure											

*Figure 3-Example Condition Assessment Report.*

### 6.3 Assembling the Report Bundle

Additional items, listed below, need to be attached to the CAR and PHOTOS.ppt to complete the mailing bundle for each site. Note that several of the additional attachments are only needed once per site (rather than for each facility). Those attachments should be included with only the first facility of the site, and then not listed at all on subsequent cover letters. The approved site plan, PMA, tax map, and GIS are usually only needed once per site. One copy of the maintenance guidelines is needed for each type of facility on the site, and should be included with the first facility of that type.

The following are the additional attachments that need to be attached to the report in accordance with the directions provided:

1. *Cover letter*: Standard templates for the cover letter (depending on whether a facility has a PMA or not and whether maintenance is required or not) can be found at *J:\STWSWM\_Branch\_Assets\Main\Private\Templates\Cover Letter*. Be sure to include the facility ID in both places where it's called for, and check that the header on the second page, and all mail merge fields on the first page are properly updated. The *Cover Letter* should be date stamped once the electronic review is complete as discussed in section 6.6.
2. *CAR*: discussed in Section 6.2.
3. *Photos with orientation sketch*: discussed in Section 6.1.
4. *Copy of Approved Plans*: found in the electronic Fixed References folder. A discussion of which sheets should be included can be found in the Pre-Inspection Research guide.
5. *Copy of PMA* (if available): found in the electronic Fixed References folder. The PMA and the Maintenance Guidelines are the only documents in the bundle that should be stapled.
6. *Tax Map*: found in the electronic Fixed References folder.
7. *GIS Aerial Photo*: found in the electronic Fixed References folder.
8. *Maintenance Guidelines*: Standard maintenance guidelines for different facility types are saved in *J:\STWSWM\_Branch\_Assets\Main\Private\Templates\Maintenance Guidelines*. Print these double-sided and staple. Proprietary devices will require manufacturer-provided guidelines which can be found on the manufacturer's website.
9. *Maintenance Activity Report (MAR)*: The MAR should only be included for facilities with required or recommended maintenance. A MAR can be found at *J:\STWSWM\_Branch\_Assets\Main\Private\Templates\Maintenance Activity Report*. The MAR should be printed double-sided; check that the mail merge fields are all updated accurately before printing.
10. *Envelope for Certified Mail*: Each report will require one large mailing envelope, three address labels to the facility owner, two return address labels from MSMD, one certified mail receipt, and one stiff 'green card'. The certified mail receipt and the green card may be obtained from the post office. Figure 8 below shows how to attach the labels to the green card and where to write the site ID and the contractor initials (for contractor reports) so that the card can be properly sorted when it comes back to MSMD. The green card provides proof of delivery. The large envelope should be fully addressed and have both the certified mail receipt and the green card attached prior to submittal.
11. *Brochure*: Include one standard "Owners Guide: Maintaining Your Stormwater Management Facility" brochure in each inspection report envelope.

## Field Inspections and Reporting Policies and Procedures

Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

**Fairfax County, DPWES**  
Maintenance & Stormwater Mgmt Div  
10635 West Drive  
Fairfax, VA 22030

(50457-R) Contractor Initials

SENDER: cc

- Complete Item 4 if Required
- Print your name so that we can identify you
- Attach this card to the front of the envelope

1. Article Address

John D. Owner  
12345 Main Street  
Anytown, VA 22030

3. Service Type

Certified Mail  Express Mail  
 Registered Mail  Return Receipt for Merchandise  
 Insured Mail  C.O.D.

4. Restricted Delivery? (Extra Fee)  Yes

2. Article Number  
(Transfer from service label) 7010 1670 0000 8115 9853

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

Figure 4-Filling out the green card for a certified mailing.

All items for each facility should be clipped together in the order stated on the cover letter for that facility, and then the facilities for each site clipped together to the envelope. Clips for the reports should be kept to the top and left of the bundle, allowing for easy flipping through the pages to stamp and sign the cover letters.

### 6.4 Inaccessible Facilities

In some instances the inspection will not be able to be completed due to access issues or for other reasons that may not be able to be worked out with the owner verbally or through email prior to the inspection. In those cases a special cover letter should be used, following the “COVER LETTER – No Inspection” template. The completed letter should include the reason why the inspection could not be performed and any additional information needed, such as meeting the inspectors on site with a key or removing heavy vegetation that is blocking access to the facility.

Most report attachments are optional for the special no-access reports. A CAR is generally not included, but any available photos should be included. Including the GIS print and/or tax map may also be helpful.

### 6.5 Report Quality Assurance/Quality Control (QA/QC)

A final check of the report is recommended for quality assurance/quality control (QA/QC) of the entire package including individual report components to help confirm both the maintenance items marked and the report's overall wording and formatting. This final step provides one last opportunity to QA/QC the report before it is mailed to the owner.

Adhere to the following procedure for performing QA/QC on forms and documents completed by the field team as part of their inspection:

- Check that all of the documents are for the correct facility ID and appear to be formatted correctly.
- Read through all checked maintenance items and photo captions, checking for wording mistakes or inconsistencies.

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- All maintenance problems visible in the photos are also noted in the captions and the CAR and are clearly described.

Any corrections should be made and the final package prepared for submittal.

### 6.6 Private Report Submittal

Once all changes have been made to the inspection package, the package should be submitted electronically to the proper staff at MSMD for review as detailed below, including updating Infor-EAM™ and updating of the inspection tracking spreadsheet. Once the electronic review is complete the cover letter is date stamped and the hardcopy submitted to the proper staff at MSMD for signature and mailing.

#### Electronic Documents

At the time of package submittal, the electronic inspection files for the privately maintained facilities must be filed by site ID and facility ID, in the facility's Inspection folder, by inspection year. For each inspection year, a "Photos" and "Report" folder should be created. The "Photos" folder will store all the photos (JPG files) and the photo log while the "Report" folder will house all other documents and files related to that year's inspection, including the owner's response (MAR) to it. Figure 5 and Table 6 below provide more information on electronic file organization and naming.

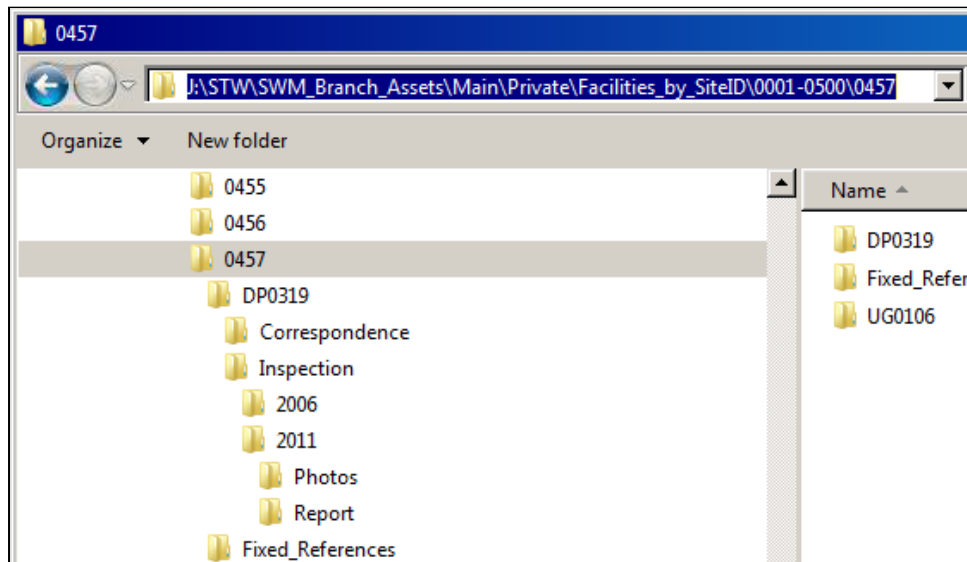


Figure 5-Where to save the inspection files, for example for the 2011 inspection of S0457 / DP0319.

Table 6- Naming conventions for private inspection files

File	File Name	File Location
Inspection Form	SiteID_FacID_INSPECTION-FORM.pdf	Report
Cover Letter	SiteID_FacID_COVER.doc	Report
	SiteID_FacID_COVER.pdf (signed letter, scanned after submittal and mailing as the start of the Follow-up tracking work)	
CAR	SiteID_FacID_CAR.doc	Report
PowerPoint	SiteID_FacID_PHOTOS.ppt	Report
MAR	SiteID_FacID_MAR.doc	Report
Inspection Photos	SiteID_FacID_PHOTO_###.jpg	Photos
Photo Log	SiteID_FacID_PHOTO-LOG.pdf	Photos



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### Infor-EAM™ Updates for Private Facilities

At the time of package submittal, the following Infor-EAM™ updates must be completed for the inspected facility. The Maintenance Needed and Maintenance Observation fields are only required for the private facility inspections, and the Previous Inspection Comments is optional.

- Last Inspection Date: date of the inspection.
- Previous Inspection: cut the value that was in the Last Inspection Date field and paste here.
- Inspection Team: county inspectors enter their initials; contractors enter their company's initials.
- Maintenance Needed: yes or no.
- Maintenance Observation: maint. recommended, maint. required or no maint. required
- Previous Inspect Comments (optional): up to 40 characters describing the facility's current condition.

Occasionally the Comments tab or the Access Comments field may need to be updated as well, based on special conditions that the inspectors find in the field.

Entering the "CAR Cert Mail Sent" date begins the follow-up tracking process.

### Inspection Tracking Spreadsheet

At the time of package submittal the private inspection tracking spreadsheet must be also updated. Private inspection tracking spreadsheets are to be saved in *J:\STWSWM\_Branch\_Assets\Main\Private\Maintenance Tracking*. For each year the county has a spreadsheet and each contractor has a spreadsheet.

The tracking spreadsheet must be updated to include the following inspection and follow-up items for each facility:

- Site ID
- Facility ID
- Inspection Task Order (for contractors only)
- Inspection Date
- Comments related to this inspection / follow-up
- Is maintenance required? (Yes / No)
- MAR Received Date
- For the Report, 45-Day-Letter, and 90-Day-Letter...
  - Date Submitted to MSMD (for contractors only)
  - Date Mailed
  - Date Received
  - 45 days after receipt date, when the next letter may be submitted
- Date submitted to Enforcement

The following additional fields are optional:

- Plan Name and Plan Number
- Tax Map information
- PMA with Deed Book / Page
- Comments by MSMD Staff (for contractors only)
- Maintenance Needs Summary (useful for checking later owner responses)
- Follow-up Closed Date

As part of the private report submittal, the Inspection Date, Maintenance Needed, Maintenance Observation and Report Submitted Date should be updated in the appropriate inspection tracking spreadsheet. The next step, follow-up work will be detailed in a separate document.



## 7 Sample Bioretention Facility Inspection Form

Bioretention Inspection Form					Inspector: _____ Cert <input type="checkbox"/>			
Fairfax County Maintenance and Stormwater Management Division					Inspector: _____ Cert <input type="checkbox"/>			
Site ID: _____		Facility ID: _____		Date: _____				
Address: _____		Facility Name: _____		Coordinates / Parcel ID: _____				
Functional? <input type="checkbox"/> Yes <input type="checkbox"/> No		Watershed: _____		District: _____				
Score Totals: <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 30px; text-align: center;">1</td><td style="width: 30px; text-align: center;">2</td><td style="width: 30px; text-align: center;">3</td></tr></table>		1	2	3	Scoring Key		① High Priority / Non-functional	
1	2	3						
		② Moderate Priority / Approaching Non-functional						
				③ Low Priority / Functional				
				④ No Priority / Continue Routine Maintenance				
				⑤ Not Applicable				
Notes / Specifications:			Facility Specific Info:					
Facility Type / Addl Facility Info:								
Signs			Weather Conditions					
SCORE	PHOTO	DESCRIPTION	Last Rainfall	Date	Amount			
③ ④ ⑤		Facility Sign		Date Source				
③ ④ ⑤		Facility Labeling	Current weather conditions?					
Accessibility								
Access Comments:			ACCESS PROBLEMS (Circle One)		NEXT STEP (Circle One)			
New Access Comments for EAM:			Locked Gate / Fence		Coordinate with Owner			
			Heavy Vegetation		Return for Re-inspection			
			Stuck / Broken Cover		Request Photos from Owner			
SCORE	PHOTO	DESCRIPTION	Equipment Needed:		Contact MSMD			
① ② ③ ④ ⑤		Overall Facility Access						
① ② ③ ④ ⑤		Component Access:	Other: _____		Other: _____			
Ponding Area								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSION S					
③ ④ ⑤		Standing Water in Basin						
① ② ③		Basin Area	Observed:	Specified:				
① ② ③		Ponding Depth	Observed:	Specified:				
① ② ③ ④ ⑤		Trash / Debris / Sediment <small>Description / Amount</small>						
① ② ③ ④ ⑤		Mulch Cover (2-3" min.)						
① ② ③ ④ ⑤		Erosion / Bare Spots <small>Area</small>						
① ② ③ ④ ⑤		Repair Filter Fabric						
① ② ③ ④ ⑤		Other: <small>Description:</small>						
Plant Material								
① ② ③ ④ ⑤		Trees Missing <small>(20% &lt; B &lt; 40% &lt; B &lt; 60% &lt; B)</small>	Observed:	Specified:				
① ② ③ ④ ⑤		Shrubs Missing <small>(see above)</small>	Observed:	Specified:				
① ② ③ ④ ⑤		Groundcover Plants Missing <small>(see above)</small>	Observed:	Specified:				
① ② ③ ④ ⑤		Unhealthy / Damaged						
① ② ③ ④ ⑤		Overgrown / Invasive Vegetation						
① ② ③ ④ ⑤		Other: <small>Description:</small>						
Plants in Inventory:								
Total % of Plant Material Coverage:								
Observation Well / Cleanout(s)								
① ② ③		Missing / Not Found						
① ② ③		Cap Missing / Stuck						
① ② ③ ④ ⑤		Water / Sediment Observed in Well?						
① ② ③ ④ ⑤		Vegetation / External Obstructions						
① ② ③ ④ ⑤		Damaged <small>Description:</small>						
① ② ③ ④ ⑤		Other: <small>Description:</small>						
Inflow(s)								
SCORE	PHOTO	DESCRIPTION	1	2	3	4	5	6
			Material / Size / Type:					
① ② ③ ④ ⑤		Blockage <small>(B &lt; 25% &lt; B &lt; 75% &lt; B)</small>						
① ② ③ ④ ⑤		Trash / Debris / Sediment <small>Description / Amount</small>						
① ② ③ ④ ⑤		Erosion / Undermining						
① ② ③ ④ ⑤		Spalling / Deterioration						
① ② ③ ④ ⑤		Separation / Misalignment						
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal						
① ② ③ ④ ⑤		Other: <small>Description:</small>						
Pre-Treatment / Energy Dissipators								
Type(s): Flow spreader / Forebay / Gravel diaphragm / Grass filter strip / Grass channel / Leaf screen / Level spreader / Other: _____								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSION S					
① ② ③		Missing / Non-Functional <small>Description:</small>						
① ② ③		Inconsistent with Plans <small>(Area, Vertical Drop, etc.)</small>	Observed:	Specified:				
① ② ③ ④ ⑤		Damage / Deterioration <small>Description:</small>						
① ② ③ ④ ⑤		Trash / Debris / Sediment <small>Description / Amount</small>						
① ② ③ ④ ⑤		Other: <small>Description:</small>						
Dam / Berm and Overflow Spillway								
SCORE	PHOTO	DESCRIPTION	COMMENTS / DIMENSION S					
① ② ③		Missing	Observed:	Specified:				
① ② ③ ④ ⑤		Slope Erosion <small>Area:</small>						
① ② ③ ④ ⑤		Bare Spots <small>Area:</small>						
① ② ③ ④ ⑤		Animal Holes						
① ② ③ ④ ⑤		Overgrown Vegetation / Tree Removal						
① ② ③ ④ ⑤		Trash / Debris / Sediment <small>Description / Amount</small>						
① ② ③ ④ ⑤		Other: <small>Description:</small>						

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Bioretention Inspection Form				Page 2
Site ID: _____		Facility ID: _____		Facility Name: _____
<b>Control Structure</b>				
Function:	Orifice Size:	Type (Circle): Riser Structure / Pipe End / Weir / Other: _____		
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①②③④⑤		Damage / Deterioration <i>Description:</i>		
①②③④⑤		Vegetation / External Obstructions		
①②③④⑤		Other: <i>Description:</i>		
<b>Low-Flow Orifice and Trash Rack</b>				
①	④	Orifice Plate Missing / Non-Functional		
①	④	Trash Rack Missing / Non-Functional		
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Damage / Deterioration <i>Description:</i>		
<b>Top Trash Rack and Anti-Vortex Plate</b>				
①	④	Pad Lock Missing		
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Damage / Deterioration <i>Description:</i>		
<b>Riser Interior</b>				
①②③④⑤		Trash / Debris / Sediment <i>Description / Amount:</i>		
①②③④⑤		Ladder / Steps Condition		
①②③④⑤		Manhole Condition		
<b>Underdrain(s) and Principal Spillway Pipe</b>				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>UNDERDRAIN(S)</b>	<b>PRINCIPAL SPILLWAY PIPE</b>
Specified on Approved Plans?				
①	④	Missing		
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Spalling / Deterioration		
①②③④⑤		Separation / Misaligned Joints		
①②③④⑤		Other:		
<b>Outfall Structure</b>				
Material:	Size:	End Type:		
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>COMMENTS / DIMENSIONS</b>	
①②③④⑤		Blockage ( $\varnothing < 25\% < \varnothing < 75\% < \varnothing$ )		
①②③④⑤		Trash / Debris / Sediment		
①②③④⑤		Erosion / Undermining <i>Area:</i>		
①②③④⑤		Spalling / Deterioration		
①②③④⑤		Separation / Misalignment		
①②③④⑤		Overgrown Vegetation / Tree Removal		
①②③④⑤		Manhole Condition		
①②③④⑤		Ladder / Steps Condition		
①②③④⑤		Downstream Channel Condition		
①②③④⑤		Other:		
<b>Other</b>				
<b>SCORE</b>	<b>PHOTO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>	
①②③④⑤		Encroachments		
①②③④⑤		Modifications		
①②③④⑤		Mosquito Habitat		
①②③④⑤		Evidence of Possible Illicit Discharge <i>(Email to report: stormwaterpollution@fairfaxcounty.gov)</i>		
<b>INSPECTOR COMMENTS</b>				

# Field Measurements and Work Order Preparation

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### 1 Introduction

The overall purpose of this effort is to produce a scope of work narrative for distribution to either in-house maintenance crews or the general contractor(s) responsible for performing non-routine maintenance work orders. This scope of work narrative will be attached to the Work Order prepared by MSMD staff and will be distributed to those responsible for completing non-routine maintenance on public ponds. The scope of work narrative will specify the required maintenance items, and will include a brief description of the work to be performed with supporting photographs from the visual inspection. Using the scope of work narrative, the maintenance crew will then prepare and submit a cost proposal to MSMD to complete the necessary maintenance for each pond. A blank work order scope of work narrative may be found in Appendix A.

A visual inspection of each pond will identify the required non-routine maintenance items required for each facility. The role of the engineering contractor in this effort includes the collection of field measurements for each maintenance item identified during the visual inspection, the preparation of the scope of work narrative, and the completion of a cost estimate based upon the measurements gathered in the field. Each component for this effort is discussed further in the subsequent sections of this document. The overall goals of this document include the following:

1. to standardize the methodology for collecting field measurements during public facility visual inspections;
2. to standardize the methods for converting the raw field data to line item descriptions included in the scope of work narratives;
3. to standardize the procedure amongst all engineering contractors involved in the inspection process in order to produce a uniform method of relaying information to MSMD staff and the maintenance team; and,
4. to develop a standard operating procedure in an effort to streamline the identification, documentation, and completion of non-routine maintenance on public ponds.

### 2 Collection of Field Measurements

The first goal of this document is to standardize the methodology for collecting field measurements. This section identifies the key measurements for each inspection item and outlines the procedure for collecting such measurements in the field. Items of note beyond basic measurements that may affect the ultimate maintenance costs are also discussed in each sub-section. While the following sub-sections attempt to outline the standard practice for collecting field measurements, inspection crews should adhere to this process to the extent feasible. Inspection crews should use sound judgment while in the field to adjust the procedure as necessary to ensure a complete and accurate estimate may be derived from the field data. **It should be reiterated that all measurements and field practices must conform to Fairfax County's Confined Space Entry procedures; at no time under the Public Inspection Program should inspection crews enter a confined space or 'break the plane' of a confined space.**

In an effort to reduce clutter on the inspection forms, field measurements should not appear on the form. Field measurements should be noted separately for incorporation into the scope of work narrative later. These additional field notes may be scanned and uploaded to the facility asset folder along with the inspection forms if deemed necessary by the engineering contractor. Simple measurements (areas, lengths, etc.) that are self-explanatory need not be uploaded for each facility; however, if measurements include calculations, assumptions were made in deriving the final measurements, or if non-standard items were included in the data, a scanned copy of the field notes should be uploaded for future reference. The scanned document should be uploaded to the facility asset folder and saved under the following naming convention: SITEID\_FACILITYID\_FIELD-NOTES.pdf.

Field work should be limited to obtaining the field measurements only. The derivation of areas, volumes, etc. required to prepare the scope of work narrative should not be performed in the field. Refer to Section 4 of this document for

## Field Measurements and Work Order Preparation

further discussion on the conversion of the field measurements to data to be used in the preparation of the scope of work narrative and cost estimate.

### 2.1 Site Accessibility

The removal of anything impeding access to the facility should be included in the scope of work narrative and measured in the field, as long as it falls under the County's responsibility. The most common examples of this include trash and debris (e.g. fallen trees). Other examples include sediment deposition from nearby erosion, damaged or broken access gates, and failed/deteriorated road surfaces. Based upon field conditions, inspection crews should ensure adequate measurements and descriptions of the item(s) requiring removal on a case-by-case basis. Examples of such measurements may include the following: the approximate size of a fallen tree; the total volume of trash, debris, and/or sediment; the area and depth of a damaged access road; or, the type, length, and height of a fence (or similar obstruction).

Examples of accessibility issues that would be noted on the inspection form but would not be the County's responsibility (i.e. the County's cost) include construction debris from a nearby private project or private vehicles parked in a manner that blocks access. In such cases, the access issues will be documented and the County will be notified, but the item(s) should not be included in the scope of work narrative.

### 2.2 Structure Accessibility

Specific items pertaining to structure accessibility are discussed in detail in subsequent subsections.

### 2.3 Facility Sign

Missing facility signs shall be recorded on a per sign basis and the measurement should include whether or not a post exists in the field. Damaged posts and/or signs should be deemed to be replaced as determined by the inspection crew based upon field conditions.

*[Note: All public facilities require a minimum of one (1) facility sign with the facility ID and watershed label. The available plans of record should be reviewed to determine whether or not additional signs were shown to be installed in the field. Ponds may include additional facility signs for large ponds, ponds with multiple access points, water quality management area signs, reforestation signs, etc.]*

### 2.4 Facility Labeling

No measurement/estimate is required for this item.

Facility and watershed labeling is included in a separate maintenance process and will not be included in the scope of work narrative.

### 2.5 Riser Structure – Pad Lock Missing

No measurement/estimate is required for this item.

The replacement/furnishing of missing pad locks and chains is included in a separate maintenance process and will not be included in the scope of work narrative.

### 2.6 Riser Structure – Trash Rack Missing

The top trash rack, low-flow trash rack, or both may be missing from a riser structure. When a detail of the missing trash rack is included in the plan of record, these dimensions should be used and included in the preparation of the

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scope of work narrative. For facilities that lack a specified trash rack design, sufficient information for use in the fabrication of an appropriate trash rack should be obtained.

The following field measurements/observations will apply:

Top Trash Rack: geometry of riser structure (square, circular, etc.); dimensions of riser structure (length by width, diameter, etc.); any irregular shape, design, weir, etc.; is an anti-vortex device to be included; etc.

Low-Flow Trash Rack: orifice size and shape; available surface area to attach trash rack (e.g., width and height of head wall); will trash rack attach to flat surface (headwall, rectangular riser) or curved surface (circular riser); width/length of concrete apron; width/height/geometry of trickle ditch; etc.

### 2.7 Riser Structure – Spalling

The deterioration of concrete (spalling) is repaired through parging. Field measurements of the total surface area to be parged (length by width) should be taken for minor or superficial deterioration. For major spalling (deep cracking, structural failures, holes, crumbling, etc.) the depth of the area to be parged should also be measured.

### 2.8 Riser Structure – Joint Failure

Joint failure is similar to spalling and will be repaired through parging for concrete structures and/or pipes. The length of failure and gap width should be measured.

### 2.9 Riser Structure – Anti-Vortex Condition

This item applies to facilities that are missing an anti-vortex device. Typically, this only applies to dry and/or wet ponds with a circular riser structure, but the plans should be reviewed in all cases to determine whether or not an anti-vortex device is required. In cases where the riser's trash rack is present, but missing the anti-vortex device, the available height, width, and span of the area for the anti-vortex device should be measured. If there is no trash rack present, the dimensions for the trash rack should account for the inclusion of an anti-vortex device.

### 2.10 Riser Structure – Trash Rack Blockage

The removal and disposal of trash rack blockages will typically be estimated on a per facility basis. For typical blockages, inspections crews need only to note that there is a blockage to be removed. For facilities with an unusually large amount of debris causing the blockage, inspection crews should obtain an approximate volume of the blockage and include a short description of the type and condition of the material to be removed. This will help ensure additional trips to the pond to obtain necessary field measurements are avoided.

### 2.11 Riser Structure – Orifice Blockage

Orifice blockages should be measured and estimated in the same manner as trash rack blockages. Small blockages may be measured on a per facility basis. For large blockages, field measurements should be taken to obtain the total volume of material to be disposed. Additional items of note to consider include whether or not the facility will require dewatering operations in order to facilitate the removal of the orifice blockage. Additional items of note should be considered on a case-by-case basis as warranted by field conditions.

### 2.12 Riser Structure – Top Trash Rack Blockage

Measurements associated with top trash rack blockages should be performed in the same manner as Subsection 2.10.

## Field Measurements and Work Order Preparation

### 2.13 Riser Structure – Manhole Condition

Any maintenance issues associated with a riser structure's point of access should be documented. While most commonly a standard manhole, access may also be in the form of Bilco Doors or custom design access doors. Damage may include a loose or damaged collar, a damaged or missing lid, or, in the case of Bilco Doors, a broken or damaged hinge. Measurements for these items should be item appropriate and include sufficient details to fully develop a scope of work. The total number of items should be noted as well as specific measurements as appropriate. For example, the field notes may include quantitative and qualitative descriptions such as: "Replace one (1) 4' diameter manhole lid", "Repair one (1) 5' diameter loose manhole collar", or "Repair four (4) 4"x8" steel hinges".

*[Note: Notify MSMD staff immediately in all cases of missing or damaged manhole lids. MSMD staff will determine whether or not the work associated with the repair/replacement should be included in the scope of work narrative or will be performed by MSMD personnel (and, therefore, not included in the scope of work narrative)]*

### 2.14 Riser Structure – Inside Riser Blockage

The total volume of material/debris to be removed from the structure should be measured in the field. However, due to the fact that the Public Inspection Program prohibits confined space entry, obtaining accurate measurements may prove difficult. Every effort should be made to obtain accurate estimates of the material(s) causing the blockage while ensuring inspection crews do not break the plane of the confined space. Tape measures should be used when feasible to determine the amount of material present (length of debris, depth of sediment, etc.). Existing features such as pipe diameters, riser diameters, etc. may be used to approximate the amount of material present, either through field measurements or the available plans of record. Visual observation of the blockage may be used to approximate the amount and/or type of material to obtain an acceptable estimate (for example, inspection crews may be able to visually estimate that eight (8) pieces of VDOT Class I rip-rap are inside the riser). Inspection crews should use their best judgment to obtain the most accurate measurements possible.

### 2.15 Riser Structure –Vegetation/External Obstructions

Vegetation and external obstructions that impede access to the riser should be estimated in an appropriate manner on a case by case basis. Standard measurements (length, width, height) of structural obstructions (e.g. walls, fences, etc.) should be taken, as well as any related observations that may affect the removal of such items. For example, nearby underground utilities, access issues, or significant footers that require equipment for their removal may affect the cost of a simple fence. In cases of external vegetation causing the obstruction, the condition, type, and amount of vegetation present should all be noted. The number and size of shrubs and trees should be noted and the diameters/heights of each measured. For additional information on the measuring of trees to be removed, please refer to Subsection 2.34.

*[Note: It is important to distinguish between routine and non-routine maintenance in this instance. Routine maintenance for pond facilities should include the removal of woody stock, brush, and trees up to 2" in diameter from around all critical structures. Vegetation/external obstructions of the riser structure falling within this threshold should not be included in the scope of work narrative. MSMD staff should be notified through the mowing QC process and the obstructions should be removed under the standard Mow Package work.]*

### 2.16 Riser Structure – Ladder/Steps Condition

Measurements associated damaged or missing ladders and steps include the following: total number of steps to be repaired and/or replaced; height and type of material of ladder; and, whether or not the ladder/steps are external to the structure or internal to the structure (and, therefore, require a confined space entry).



## Field Measurements and Work Order Preparation

### 2.17 Riser Structure – Other

Any other non-routine maintenance items associated with the riser/control structure are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

### 2.18 Principal Spillway Pipe – Spalling

Measurements associated with spalling on the Principal Spillway Pipe (PSP) should be performed in the same manner as Subsection 2.7.

### 2.19 Principal Spillway Pipe – Blockage

Blockages of the PSP should be measured in total volume of material to be removed and disposed. For small blockages at the end of the pipe, the volume may be estimated through direct measurements or visual observation. For example, an inspection crew may be able to measure the amount of sediment by sticking a tape measure within the pipe or estimating the amount of rip-rap observed. Field measurements for the diameter, length, and depth of material should be used when feasible. When field measurements are not feasible or attainable, information from the plans of record should be utilized. Only when no other information is available should pipe measurements be estimated. Similar to other items, field observations should also describe the type and condition of the material causing the blockage.

### 2.20 Principal Spillway Pipe – Joint Failure

Measurements associated with PSP joint failure should be performed in the same manner as Subsection 2.8.

### 2.21 Principal Spillway Pipe – Misaligned Joints

Inspection crews must first identify the degree of misalignment in order to determine the appropriate method of repair. Minor misalignment of joints (scored as a 3) may be repaired through parging. When possible, the width of the gap and diameter of the pipe should be measured. For those joints located within a confined space that preclude direct measurement, the total number of misaligned joints should be noted and estimates of the gap width provided to the fullest degree possible. *[Since the misalignment in this case is within the PSP, it is important to note that in order to qualify as minor and be repaired through simple parging, the flow of water must not be impeded by the misaligned joints.]*

Misaligned joints may be categorized as major (scored as a 2 or 1) because they either impeded the flow of water or the gap between the two pipe segments exceeds 3". Repair to correct these misaligned joints require substantial work. Field measurements required in these instances include the diameter of the pipe, the length of the misalignment (size of the gap), depth of the pipe/amount of backfill, and the segment length of the pipe on downstream end of the misalignment. Any other information that could prove useful to determine the cost to correct the misalignment should be included in the field measurements.

### 2.22 Principal Spillway Pipe – Separation

Separation within the PSP must first be identified in the field as minor (scored as a 3) or major (scored as a 2 or 1). Separation may be classified as minor if the separation gap is less than 3" and the separation occurred along the longitudinal axis of the pipe (i.e. the pipe has only pulled apart in a longitudinal manner so that both pipes are still at the same slope and there is no vertical drop between the pipes observed). In this case, the diameter of the pipe, the separation distance (gap), and pipe material should be noted when possible. For those joints located within a confined space that preclude direct measurement, the total number of misaligned joints should be noted and estimates of the gap width provided to the fullest degree possible.

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Major separation occurs when one or more of the following conditions occur: the separation is greater than or equal to 3"; the pipes have separated vertically as well as longitudinally (i.e. there is a vertical drop across the pipes and the two pipes are now laying at different slopes); failure of the system is imminent; or additional deficiencies are present as a result of the separation (examples of this include a cave-in above the pipe or evidence of undermining beneath the pipe). Field measurements need to provide sufficient information to repair the deficiency based upon field conditions. These measurements include the PSP diameter, pipe material, downstream pipe segment length, separation distance (gap), and amount of backfill over the pipe.

### 2.23 Principal Spillway Pipe – Other

Any other non-routine maintenance items associated with the PSP are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

### 2.24 Outfall Downstream – Spalling

Measurements associated with spalling on the downstream outfall structure should be performed in the same manner as Subsection 2.7.

### 2.25 Outfall Downstream – Undermining

The main measurements associated with undermining at the outfall structure are those required to determine the volume of material needed to stabilize the undermining. The void area under the structure should be measured directly in the field to determine the width, length, and depth. It is important to note that this area may extend either in front of the structure, underneath the structure, or both. Other information that should be noted by the inspection crews in the field include the condition of the receiving channel, the type of receiving channel (natural soil, rocky earth, concrete ditch), geometry of the receiving channel, and the condition of the structure itself. In the event that the undermining has caused deterioration or failure of the structure, additional measurements will be required. Minor deterioration/spalling/cracking that may be repaired through parging should be measured in accordance with Subsection 2.7. In instances where major repair or replacement of the structure is required, the structure type (end section, end wall, etc.) and size should be noted. If a concrete apron is present, the length, width, and thickness of the concrete should also be measured.

### 2.26 Outfall Downstream – Separation

Separation between the PSP and downstream outfall structure should be measured in a manner similar to Subsection 2.22. In the case of minor separation (scored as a 3), measurements should be taken to obtain the total surface area to be parged (width of gap and pipe diameter). Major separation (scored as a 2 or 1) must be evaluated in the field to determine the extent of damage and amount of necessary repairs. Instances where parging and/or slip-lining are not viable options to complete the repairs, the structure type, pipe size, and structure dimensions should be noted. Dimensions of the structure include width, height, and thickness.

The dimensions and geometry (angles) of any wing walls present should also be measured. Additional information gathered in the field should include access issues that exist, downstream outfall conditions (material/geometry of channel, presence of rip-rap, etc.), volume of excavation required, and any structural components present (e.g. handrail).

### 2.27 Outfall Downstream – Erosion

The area and depth of eroded areas should be measured in the field. Minor downstream erosion will likely be repaired through a combination of standard erosion control netting (e.g. jute mesh) and seeding. Therefore, minor erosion will often be measured only in terms of area to be stabilized (square yards). Measurements for significant areas of erosion

## Field Measurements and Work Order Preparation

include the area to be stabilized (square yards), as well as the depth of erosion, to determine the amount of material in cubic yards required to stabilize the area. The material and condition of the area should be noted in the field and should include pertinent information such as channel type (natural, rip-rap, concrete, etc.) and channel geometry (V-ditch, trapezoidal ditch, etc.). Preparation of the scope of work narrative will include the determination as to whether or not temporary controls are required so the field notes should also provide qualitative descriptions of the erosion. Such descriptions may include whether or not the erosion is ongoing or has stabilized, condition of the downstream channel past the erosion, and descriptions of any potential downstream areas that are sensitive or may be impacted by the erosion (e.g. downstream structures or dwellings, streams, etc.).

### 2.28 Outfall Downstream – Cave-In

The size, depth, and location of any cave-ins encountered in the field should be noted in order to determine the amount of material required to fill and stabilize the area.

### 2.29 Outfall Downstream – Blockage

Often times a facility's PSP will outfall to a closed conduit system (e.g. manhole or curb inlet). The outfall pipe from this downstream structure should be evaluated as part of the visual assessment to determine whether or not downstream blockages are present within the system. If blockages are observed within the downstream outfall pipe, measurements should be performed in the same manner as Subsection 2.19.

### 2.30 Outfall Downstream – Displaced Rip-Rap

Field measurements should include the total area in need of rip-rap. The rip-rap that was displaced shall not be removed unless it obstructs a conveyance or structure. The length of rip-rap should be a minimum of 10' from the end of the structure; the minimum width of the rip-rap should be assumed to be 6'. For the various outfall types, the following measurements should be made in the field:

Pipe End:	A minimum of 10' from the pipe end, unless additional area is needed based upon field conditions. The width of the rip-rap should be 3 times the PSP diameter, but not less than 6' wide.
End-Section:	A minimum of 10' from the end of the structure, unless additional area is needed based upon field conditions. The width of the rip-rap should be 3 times the PSP diameter, but not less than 6' wide.
End Wall:	A minimum of 10' from the end of the structure, unless additional area is needed based upon field conditions. The width of the rip-rap should be equal to the width of the structure, but not less than 6'.
End Wall w/ Wing Walls:	A minimum of 10' from the end of the wing walls, unless additional area is needed based upon field conditions. The width of the rip-rap should be equal to the width of the structure from edge of wing wall to edge of wing wall. If no concrete apron is present, the area 'enclosed' by the structure should also be measured and included in the total area.

### 2.31 Outfall Downstream – Overgrown Vegetation

Overgrown vegetation in the vicinity of the outfall structure should be measured in the field in a manner similar to Subsection 2.15.

### 2.32 Outfall Downstream – Downstream Blockage

A downstream blockage usually refers to blockages in natural or man-made channels for facilities that outfall to daylight. Typical blockages consist of trash and debris, fallen trees, sediment deposition, and/or displaced rip-rap. The removal of downstream blockages should be determined on a case-by-case basis. Most often, the field measurements

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associated with a downstream blockage will include the length, width, and depth (as appropriate) of the debris causing the blockage, as well as a short description of the condition of the material.

### 2.33 Outfall Downstream – Handrail Status

Damaged or missing handrail should be documented in the field. The extent of damage should be explicitly listed in the field notes. Typical measurements for damaged handrail may include the following: handrail type (e.g. HR-1, HR-2, etc.), diameter or rail; total linear feet of damaged or missing railing; number of loose or damaged joints, welds, or connections to structure; description of how handrail is attached to structure; and height of handrail. In cases where handrail is missing, the total linear footage and height required for installation is required.

### 2.34 Outfall Downstream – Tree Removal

The removal of trees greater than two inches (2") in diameter will be included in the non-routine maintenance scope of work narrative. The diameter and total number of trees to be removed should be noted. The diameter of all trees to be removed shall be measured in accordance with Section 12-0507.1A of the Fairfax County PFM, which states: "The diameter of all trees shall be measured at a height of 4.5 feet from the base of the trunk or as otherwise allowed in the latest edition of the Guide for Plant Appraisal, published by the International Society of Arboriculture."

Additional field observations associated with the removal of trees that should be noted include the accessibility to the trees and sensitive or critical items within the vicinity (e.g. power lines, nearby dwellings or structures, proximity of vehicular or pedestrian traffic, etc.) that may affect removal operations.

*[Note: It should be noted that the removal of trees does not include the removal of the stump or associated root system. In most cases, the tree will be cut at ground level and the stump/roots left in place.]*

### 2.35 Pond Floor – Silted-In/Debris 75%

This line item will be marked during the visual assessment of a facility only when approximately 75% or more of the total pond volume is silted in or full of debris. Typically, this maintenance item will not be included in the scope of work narrative as the work will be performed under a separate maintenance program involving pre- and post-sediment removal as-built surveys of the pond. Should inclusion of this maintenance item be included in the scope of work narrative, the total sediment to be removed should be estimated in cubic yards of material to be removed.

### 2.36 Pond Floor – Trash/Debris Removal

Trash and debris removal on the pond floor will vary by type, size, and amount. Trash/debris removal should be evaluated on a case-by-case basis. Most often, the field measurements associated with the removal of trash and debris include the total volume and a short description of the material to be removed.

### 2.37 Pond Floor – Tree/Vegetation Removal

Tree and vegetation on the pond floor that is deemed to be removed should be estimated in a similar manner to Subsection 2.34 and Subsection 2.15. It should be noted that trees and vegetation are allowed on the pond floors in most cases, as long as they are not impeding the flow of water or affecting the functionality of the facility.

### 2.38 Pond Floor – Other

Any other non-routine maintenance items associated with the pond floor are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

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### 2.39 Wetland Habitat – Trash and Debris

Trash and debris removal within wetland habitats should be estimated in manner similar to Subsection 2.26. Information contained in the plans of record (construction notes, maintenance specifications, etc.) should be reviewed to determine if any maintenance or disposal activities violate the intended design.

### 2.40 Wetland Habitat – Bare Spots

The location(s) of bare spots observed should be documented and the total area(s) of each measured. If the plans of record document a specific seed mix, this information should also be noted for quick reference during the preparation of the scope of work narrative.

### 2.41 Wetland Habitat – Sediment Deposition

The location(s) of sediment deposition should be documented and the size and depth of each measured to obtain the total volume of sediment present.

### 2.42 Wetland Habitat – Condition of Plants

Any plants within the habitat area that are dead, dying, damaged, or showing signs of poor health should be documented. Inspection crews should note the total number of plants in poor condition, as well as the species (may be identified through field observation or planting schedule), size, and extent of damage/deterioration for each.

### 2.43 Wetland Habitat – Erosion

Areas of erosion within the wetland habitat should be measured in a similar manner to Subsection 2.27.

### 2.44 Wetland Habitat – Ponding Water

Ponding water is not necessarily an item that will be measured. Instead, inspection crews should investigate the cause of the ponding water and determine the field measurements required in accordance with the appropriate subsection(s) contained herein. Causes of ponding water within a wetland habitat may include blockages, trash and debris, or sediment deposition. The plans of record should also be reviewed in this case to determine whether or not the wetland habitat and ponding water is actually a function of the design (i.e. the ponding water may be a sediment forebay and not an actual maintenance item).

### 2.45 Wetland Habitat – Undesired Vegetation

Overgrown vegetation, invasive species, and vegetation not included in the design may require removal. In the instance of easily identifiable plants, the total size and number of undesired plants should be noted. In the event the undesired vegetation is a ground cover or vines (e.g. poison ivy), the total coverage area should be measured. A certified arborist may be required to prepare a removal plan, if the plantings cannot be confirmed with the plans of record. Further coordination with MSMD staff in these instances should occur.

*[Note: Some undesired vegetation requires immediate notification to MSMD staff upon encountering them in the field. Giant Hogweed, for example, is toxic and poses a safety risk to inspection crews and the general public. In the event that Giant Hogweed is encountered, or thought possibly to be encountered, do not touch the plant and notify MSMD staff immediately.]*

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### 2.46 Wetland Habitat – Forebay Condition

Similarly to ponding water, forebay condition is not necessarily an item that will be measured. The field conditions of the forebay should be compared against the design information in the plans of record. Maintenance items and/or changes to the design should be documented in the field notes. Any deficiencies observed should be measured in accordance with the appropriate subsection(s) contained herein.

### 2.47 Wetland Habitat – Marsh Condition

The plans of record should be reviewed to determine the design and maintenance considerations associated with a designed marsh area. Similarly to Subsection 2.44 and Subsection 2.46, field measurements for any maintenance items within the marsh area should be in accordance with the appropriate subsection(s) contained herein.

### 2.48 Wetland Habitat – Micropool Condition

Similarly to ponding water, forebay condition, and marsh condition, the micropool condition is not necessarily an item that will be measured. The field conditions of the micropool should be compared against the design information in the plans of record. Maintenance items and/or changes to the design should be documented in the field notes. Any deficiencies observed should be measured in accordance with the appropriate subsection(s) contained herein. Plans should be reviewed in particular for any type of drawdown duration for the micropool to ensure the facility is holding water for the intended length of time.

### 2.49 Wetland Habitat – Posted Sign(s) Condition

Wetland habitat signage should be reviewed and measured in the field in a similar manner to Subsection 2.

### 2.50 Wetland Habitat – Tree Removal

Tree removal within the wetland habitat should be measured in accordance with Subsection 2.34.

### 2.51 Wetland Habitat – Other

Any other non-routine maintenance items associated with the wetland habitat are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

### 2.52 Dam / Berm – Toe Soft Spots

Soft spots within 10' of the bottom of slope, or toe, of the dam/berm should be measured. The total area and location(s) of the soft spots should be documented. Inspection crews should also include a qualitative description of the area noting the degree of saturation, possible sources of water contributing to the soft spot, and whether or not the situation appears to be worsening.

### 2.53 Dam / Berm – Slope Erosion

Areas of erosion found on the dam/berm (or within 10' of the toe of the dam) should be measured in a similar manner to Subsection 2.27. Since the erosion in this case is located on the dam, all areas of erosion should be evaluated and measured in the field as though the erosion could be categorized as major. The area, depth, and a qualitative description (e.g. stabilized, worsening, etc.) of the erosion should be included.



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### 2.54 Dam / Berm – Bare Spots

The location(s) of bare spots observed should be documented and the total area(s) of each measured. Field observations should also include the presence (or lack thereof) and condition of any topsoil in the area.

### 2.55 Dam / Berm – Cave-In

Cave-ins encountered on the dam/berm should be measured in a similar manner to Subsection 2.28.

### 2.56 Dam / Berm – Animal Holes

The size and location of all animal holes found on the dam/berm should be accurately depicted. The condition of the hole should also be noted, specifically whether or not it appears as though the hole is actively being used by an animal. Inspection crews should attempt to measure the depth of the animal hole.

### 2.57 Dam / Berm – Tree Removal

Tree removal on the dam/berm should be measured in the same manner as Subsection 2.34.

### 2.58 Dam / Berm – Overgrown Vegetation

The location(s) of any overgrown vegetation should be documented and measured in accordance with Subsection 2.15. Attention should be paid to this item to ensure routine maintenance is not included in the scope of work narrative as discussed in Subsection 2.15.

### 2.59 Dam / Berm – Alterations

Any alterations to the dam/berm not shown on the plans of record should be documented and measured in accordance with the most appropriate subsection(s) discussed herein.

### 2.60 Dam / Berm – Other

Any other non-routine maintenance items associated with the dam/berm are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

### 2.61 Emergency Spillway – Erosion

Areas of erosion within the emergency spillway should be measured in a similar manner to Subsection 2.27. This is not applicable to combined principal/emergency spillway structures.

### 2.62 Emergency Spillway – Bare Spots

Bare spots observed within the emergency spillway should be measured in a similar manner to Subsection 2.54. This is not applicable to combined principal/emergency spillway structures.

### 2.63 Emergency Spillway – Overgrown Vegetation

The location(s) of any overgrown vegetation observed on the emergency spillway should be documented and measured in accordance with Subsection 2.15. Attention should be paid to this item to ensure routine maintenance is not included in the scope of work narrative as discussed in Subsection 2.15.

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### 2.64 Emergency Spillway – Blockage

Depending upon the type of emergency spillway, the measurements associated with blockages differ slightly. Blockages of emergency spillways draining via overland flow should be measured in accordance with Subsection 2.32 and Subsection 2.10. Emergency spillways that are structures and drain via a closed conduit system should be evaluated and measured in accordance with Subsection 2.19.

### 2.65 Emergency Spillway – Tree Removal

Tree removal in the vicinity of the emergency spillway should be measured in a similar manner to Subsection 2.34.

### 2.66 Emergency Spillway – Other

Any other non-routine maintenance items associated with the emergency spillway are included within this section. Field measurements (and the associated units of measurement used) should be appropriately selected based upon similar subsections discussed herein.

### 2.67 Upstream Inflows – Spalling

Spalling on upstream inflows should be measured in a similar manner to Subsection 2.7.

### 2.68 Upstream Inflows – Undermining

Undermining observed at upstream inflows should be measured in a similar manner to Subsection 2.25.

### 2.69 Upstream Inflows – Separation

Separation associated with upstream inflows should be measured in a similar manner to Subsection 2.22 (separation observed inside the pipe) and Subsection 2.26 (separation observed between the structure and pipe).

### 2.70 Upstream Inflows – Erosion

Areas of erosion in the vicinity of any upstream inflows should be measured in a similar manner to Subsection 2.27.

### 2.71 Upstream Inflows – Cave-In

Cave-ins observed in the vicinity of any upstream inflows should be measured in a similar manner to Subsection 2.28.

### 2.72 Upstream Inflows – Blockage

Blockages observed within the pipes for any upstream inflow should be measured in a similar manner to Subsection 2.19.

### 2.73 Upstream Inflows – Displaced Rip-Rap

Displaced rip-rap observed at upstream inflows should be measured in a similar manner to Subsection 2.30.

### 2.74 Upstream Inflows – Overgrown Vegetation

Overgrown vegetation observed at any upstream inflow should be measured in a similar manner to Subsection 2.15.

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### 2.75 Upstream Inflows – Outflow Obstruction

Outflow obstructions located at upstream inflows may be treated as downstream blockages and should be measured in a similar manner to Subsection 2.32.

### 2.76 Upstream Inflows – Handrail Status

The handrail status at upstream inflows should be evaluated in a similar manner to Subsection 2.3

### 2.77 Upstream Inflows – Misaligned Joints

Misaligned joints observed at upstream inflows should be measured in a similar manner to Subsection 2.21.

### 2.78 Pond Flow Low Flow – Sedimentation

Sedimentation with the low flow ditch system should be measured in order to determine the total volume of material to be removed. The total length of the sedimentation within the low flow ditch should be measured. Additional field observations/measurements should include the depth of the sediment to be removed, the geometry of the low flow ditch, any applicable measurements (bottom width, top width, height, etc.), and the vertical height difference between the top of the ditch and the top of the sediment.

### 2.79 Pond Flow Low Flow – Detoured Flow Line

A detoured flow line is not necessarily an item that will be measured. Instead, inspection crews should investigate the cause of the detoured flow line and determine the field measurements required in accordance with the appropriate subsection(s) contained herein. Causes of detoured flow lines may include blockages, trash and debris, sediment deposition, or overgrown vegetation. Once the cause of the detoured flow line is determined, field measurements should proceed in accordance with the appropriate subsection discussed herein.

### 2.80 Pond Flow Low Flow – Obstructions

Any obstructions impeding the flow of water within the low flow ditch system should be quantified under this section (the only exception being sediment since this will be measured in accordance with Subsection 2.78). Inspection crews should use discretion based upon field conditions to determine the most appropriate means of quantifying the obstruction. Examples of this include a damaged concrete trickle ditch that is causing a blockage or rip-rap that has washed down from an inflow.

### 2.81 Pond Flow Low Flow – Erosion/Trenching/Roots

Erosion observed along or beside a low flow ditch system should be measured in accordance with Subsection 2.27. Erosion that has progressed and is causing undermining and/or trenching along or underneath the ditch system should be measured in a similar manner to Subsection 2.25. Roots in the vicinity that are causing damage to the low flow ditch system, or impeding the flow of water within the ditch system, and have been deemed to be removed should be measured as well. The removal of the tree will be in accordance with Subsection 2.34. Inspection crews should measure the distance from the root damage back to the tree should account for the excavation required to remove the severed root. Field measurements should account for any other pertinent information including, but not limited to, the amount of backfill required and whether or not the stump requires removal as well.

### 2.82 Encroachments / Modifications – Pond

Encroachments and modifications to ponds are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Items that are causing

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encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

### 2.83 Encroachments / Modifications – Embankments

Encroachments and modifications to embankments are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Items that are causing encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the embankment should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

### 2.84 Encroachments / Modifications – Spillway

Encroachments and modifications to spillways (either principal or emergency) are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Items that are causing encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the spillway should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

### 2.85 Encroachments / Modifications – Modifications

Any modifications to a facility (or its associated components) that affect its design and/or functioning should be well documented in the field. Inspection crews should use their discretion when evaluating modifications to determine the method for obtaining field measurements in accordance with the most appropriate subsection discussed herein. In any case, MSMD staff should be notified of any modifications to a facility.

### 2.86 Mosquito Habitat Location – Pond Floor

Mosquito habitats usually present themselves due to a separate, underlying maintenance issue (e.g. a blockage is preventing the flow of water or a riser structure's floor is below the outfall invert). The area of ponding, however, may require treatment for the time between the visual assessment and the completion of the required maintenance. Therefore, all mosquito habitats should be measured to estimate the total volume of water to be treated. The surface area and average depth should be noted based upon field observations.

### 2.87 Mosquito Habitat Location – Outfall

Mosquito habitats usually present themselves due to a separate, underlying maintenance issue (e.g. a blockage is preventing the flow of water or a riser structure's floor is below the outfall invert). The area of ponding, however, may require treatment for the time between the visual assessment and the completion of the required maintenance. Therefore, all mosquito habitats should be measured to estimate the total volume of water to be treated. The surface area and average depth should be noted based upon field observations.

### 2.88 Mosquito Habitat Location – Other

Mosquito habitats usually present themselves due to a separate, underlying maintenance issue (e.g. a blockage is preventing the flow of water or a riser structure's floor is below the outfall invert). The area of ponding, however, may require treatment for the time between the visual assessment and the completion of the required maintenance. Therefore, all mosquito habitats should be measured to estimate the total volume of water to be treated. The surface area and average depth should be noted based upon field observations.

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Following completion of the visual assessment, the inspection form and field notes should be quickly reviewed to ensure all necessary measurements have been obtained. It is recommended to keep a copy of this section in the field for reference while performing visual assessments. The completed inspection form, photos, and field notes will be used in development of the scope of work narrative and cost estimate, and should be reviewed to ensure accuracy and completeness.

### 3 Preparation of the Scope of Work Narrative and Cost Estimate

This section discusses the preparation of the scope of work narrative and cost estimate. Using the inspection forms and measurements obtained in the field by the inspection crews, the scope of work narrative outlines the required non-routine maintenance required for a facility. The narrative includes a qualitative description, a quantitative description, supporting photographs from the visual assessment for each maintenance item observed in the field, and will be used by the general contractor(s) to develop a proposals to perform the work. The cost estimate will provide MSMD staff an approximate cost of the maintenance work to compare against the cost proposals received from general contractors.

The preparation of the scope of work narrative begins following the QC review of the inspection form and photos for a facility. This will ensure the scope of work narrative includes all required non-routine maintenance items. The following outlines the steps for completing the scope of work narrative:

1. Copy the blank template ([J:\STW\SWM\\_Branch\\_Assets\Main\Public\Templates\SOW-NARRATIVE.xlsx](#)) to the facility asset folder and rename it to SITEID\_FACILITYID\_SOW-NARRATIVE.xlsx.
2. Update the facility ID number and date of inspection at the top of the worksheet.
3. Complete the “Visual Condition Assessment Results” section in the top left of the form. This section shall include a short description (qualitative) of each non-routine maintenance item. A photo from the visual assessment should be included in the narrative for each maintenance item listed. The description for each maintenance item should also include a reference to the corresponding photo showing the field conditions prompting the maintenance. [For example, “1. Spalling observed on riser (see photo 1)”].
4. Using the field measurements, a corresponding quantity for each maintenance item should be developed and included in the “Scope of Work Description” section of the worksheet. The description in this section should be very similar to the description provided under the Visual Condition Assessment Results section, but should also include the corresponding quantity [For example, “1. Parge 16 SF on face of riser”].
5. Within the facility’s electronic asset folder, save the completed scope of work narrative within the “Inspection” sub-folder.
6. Following completion of the scope of work narrative, the cost estimate should be prepared. A blank copy of the cost estimate should be saved from the public template folder ([J:\STW\SWM\\_Branch\\_Assets\Main\Public\Templates\SiteID\\_FacilityID\\_Non-Routine Cost Estimate.xlsx](#)) and saved to within the same “Inspection” sub-folder as the scope of work narrative.
7. Rename the template to include the Site ID and Facility ID for each pond. The top of the cost estimate worksheet should be updated to include the following information:
  - a. Site ID and Facility ID
  - b. Date of Inspection
  - c. Date of Estimate
  - d. Estimate Prepared by (Company Name/Abbreviation)

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8. Complete the cost estimate worksheet to include all maintenance items required for the pond. Each item included in the scope of work narrative should be included in the cost estimate.

*[Note: The cost estimate worksheet includes those maintenance line items most often observed in the field. In order to provide MSMD staff with the most accurate estimate possible, additional line items deemed necessary by the engineering contractor may be added to the worksheet. These line items should be included under a "Non-Std" line item at the end of the worksheet on a case-by-case basis.]*

The deliverables for each public facility undergoing a visual assessment will include an electronic copy of the following:

- a. inspection form(s)
- b. inspection photos
- c. scope of work narrative
- d. cost estimate
- e. scanned copy of field notes/measurements (if determined necessary on a case-by-case basis by the engineering contractor)

Further discussion of the overall submittal procedure and schedule is included in Section 3.4 of this document.

As with the collection of the field measurements, the preparation of the cost estimate and derivation of the units of measure for each inspection form item varies slightly among the maintenance items. The following subsections discuss each inspection item in greater detail and provide the methodology to convert the field measurements obtained during the visual assessment to the standard units of measure required to complete the cost estimate.

### 3.1 Site Accessibility

It is difficult to apply a standard methodology to determine an associated cost for the site accessibility inspection item. It is difficult to predict all of the items that may preclude access to a facility. Engineering contractors must use sound engineering judgment while preparing the cost estimate for any non-routine maintenance items falling under this section. A damaged access road, for example, may be included in the cost estimate under line items #43, #44, and #45. Other items included under this section should be evaluated on a case-by-case basis and included in the cost estimate as deemed appropriate by the engineering contractor.

### 3.2 Structure Accessibility

Specific items pertaining to structure accessibility are discussed in detail in subsequent subsections.

### 3.3 Facility Sign

The replacement of missing or displaced facility signs will be estimated using cost estimate line items #39 or #40, depending upon whether or not a new sign post is required. This estimate is based on a per sign basis and may be taken directly from the field notes.

### 3.4 Facility Labeling

No estimate is required for this item. Facility and watershed labeling is included in a separate maintenance process and will not be included in the cost estimate.

### 3.5 Riser Structure – Pad Lock Missing

No estimate is required for this item. The replacement/furnishing of missing pad locks and chains is included in a separate maintenance process and will not be included in the cost estimate.



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### 3.6 Riser Structure – Trash Rack Missing

Trash racks must be priced on a case by case basis. Based upon either the detail(s) included in the plans of record, the field measurements, or a combination of the two, the total amount of material (steel) used in the fabrication must be determined. The total amount of material should then be converted to a weight to determine the final pricing on a per pound basis.

Low-Flow Trash Rack Estimates: Most low-flow trash racks will need to be designed on an individual basis based upon the plan details or field constraints. The field measurements or plan detail(s) will be used to determine the total amount of steel used. The total amount of material used may be converted to a weight using a standard value equal to 490 lbs. / ft<sup>3</sup>. Once the weight is determined, the total price may be estimated using line item #36 from the cost estimate worksheet.

Top Trash Rack Estimates: When available, plan details and/or field measurements should be used to determine the most accurate estimate of the total amount of steel required to fabricate the missing top trash rack. Once the total amount of steel is known, the total cost may be determined in the same manner as above, with the weight of steel estimated to be 490 lbs. / ft<sup>3</sup> and the average cost determined by using line item #37 from the cost estimate worksheet. When plan details are not readily available to determine the required trash rack design, an approximate total weight may be determined by using the VDOT Road & Bridge Standards. For a square riser with a 4'-0" interior dimension and a 5'-4" exterior dimension, the VDOT Road & Bridge Standards estimates the total weight of an acceptable steel trash rack to be 188 pounds. For circular riser structures, the VDOT Road & Bridge Standards estimates the following weights (in pounds):

<u>Riser Interior Dia. (feet)</u>	<u>Approx. Weight of Trash Rack (pounds)</u>
2	46
3	82
4	120
5	169
6	227
7	290
8	341

*[Note: The assumed weights above do not include the associated weight of any anti-vortex devices that may be required. Required anti-vortex devices should be calculated separately in accordance with Subsection 3.9]*

### 3.7 Riser Structure – Spalling

The cost to repair spalling on or inside the riser structure is estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined directly from the field measurements.

### 3.8 Riser Structure – Joint Failure

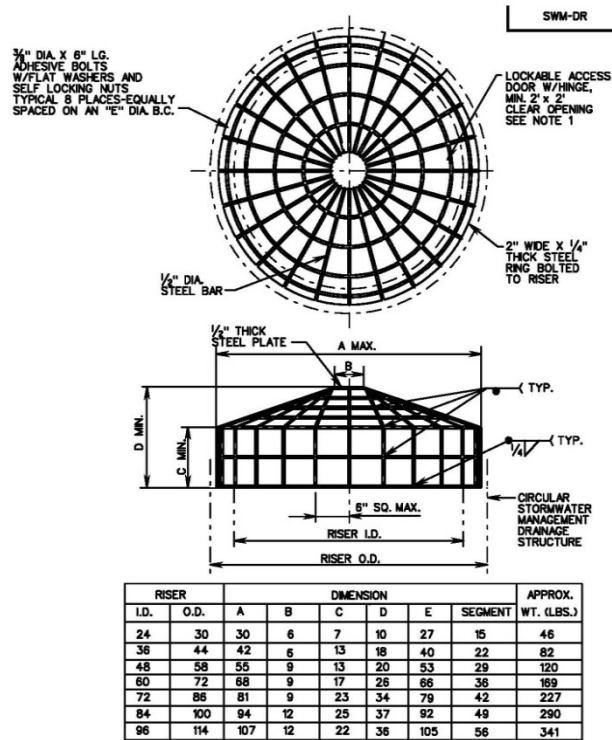
Similarly to Subsection 3.7, joint failure may be repaired through parging. The associated maintenance cost to perform the repairs is also estimated using line item #19 on the cost estimate worksheet. The total area to be parged should be determined directly from the field measurements.

### 3.9 Riser Structure – Anti-Vortex Condition

If required by the design but not installed in the field, an anti-vortex device should be included in the cost estimate using line item #37. The total amount of material may be calculated based upon the design of the trash rack, which

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then may be converted to a total weight to determine the cost on a per pound basis. In the event that the riser structure is also missing the trash rack, the anti-vortex device must be included in addition to the cost of the trash rack. The assumptions made under Subsection 3.6 do not include an anti-vortex device.



Example: A standard 4' circular riser structure is missing its top trash rack. Based upon the design, an anti-vortex device is required. The plan lacks specific design details and only calls out for a "standard trash rack". Since the plans do not specify the trash rack design and there is no trash rack installed in the field to measure, assumptions will be made based upon the VDOT Road & Bridge Standards. The following detail and table is taken from Section 114.07 of the VDOT Road & Bridge Standards: The total weight may be approximated by determining the total amount of steel:

$$\text{Area} = (48" \times 13") + [2 \times (1/2)(19.5")(7")] + (9" \times 7")$$

$$\text{Area} = 823.5 \text{ sq. in.}$$

Assuming 1/2" thick plate, the volume equals:

$$V = (823.5 \text{ sq. in.}) \times (1/2") = 411.75 \text{ cu. in.}$$

Converting this to cubic feet results in a total volume of steel equal to 0.238 cubic feet.

The total weight may then be approximated at  $W = (0.238 \text{ cu. feet}) \times (490 \text{ lbs./ft}^3) = 116.75 \text{ lbs.}$

The total cost is then estimated to be 116.75 lbs. at a unit cost of \$10.50/lbs, or \$1,225.88.

### 3.10 Riser Structure –Trash Rack Blockage

For typical blockages, inspection crews will simply note in the field that removal of debris is required from the low-flow trash rack. These smaller, routine blockages should be included in the cost estimate on a per facility basis using line item #66. Typical blockages include minor sediment, leaves, grass clippings, trash, and small debris (sticks, branches, etc.).

Non-typical blockages should be included in the cost estimate using line item #17. Field measurements will include the necessary measurements in these instances to determine the total cubic feet of debris to be removed. Non-typical blockages estimated using line item #17 may include large debris (logs, fallen trees, etc.) or an unusually large amount of small debris. In cases where the blockage is a result of a large amount of sediment, the engineering contractor should use sound judgment based upon field conditions to evaluate whether or not the cost should be

estimated using line item #17 or additional costs should be accounted for through the use of line item #69.

### 3.11 Riser Structure –Orifice Blockage

Small orifice blockages may be estimated using cost estimate line item #66 in a similar manner to Subsection 3.10. Additional costs should also be evaluated to determine whether or not any non-standard items should be included in the cost estimate (for example, if the orifice blockage is preventing the pond from draining, costs for dewatering services may be warranted).

## Field Measurements and Work Order Preparation

### 3.12 Riser Structure – Top Trash Rack Blockage

Estimate preparation associated with top trash rack blockages should be performed in the same general manner as Subsection 3.10. Typical top trash rack blockages should be distinguished from low-flow trash rack blockages by using line item #67 on the cost estimate worksheet in lieu of line item #66.

### 3.13 Riser Structure – Manhole Condition

Non-routine maintenance work associated with the “Riser Structure – Manhole Condition” inspection item varies in nature to the degree that the engineering contractor should use sound judgment to determine the most appropriate line item(s) on a case by case basis. Non-standard items should be included in the cost estimate as conditions warrant.

### 3.14 Riser Structure – Inside Riser Blockage

Inside riser blockages should be included in the cost estimate using line item #17. The total volume (cubic feet) of the blockage may be determined directly from the field measurements. When field conditions prevent inspection crews from obtaining direct measurements of the blockage, the engineering contractor should use their best judgment while preparing the scope of work narrative and cost estimate based upon field conditions, photos, and known data.

### 3.15 Riser Structure –Vegetation/External Obstructions

Removal of vegetation that prohibits or restricts access to the riser should be included in the cost estimate using line items #1 through #8 as applicable. General clearing of overgrown vegetation, woody stock, and/or trees up to 2” in diameter should be estimated using line item #1 on a per tenth-acre basis. The field measurements should include the total area (square feet) of the overgrown vegetation. Unit conversion may then be applied directly to the field measurements for inclusion in the cost estimate. Any trees greater than 2” in diameter should be estimated using line items #2 through #6 as applicable. Typical tree removal involves cutting the tree at ground level and leaving the stump in place; additional costs for stump removal should be included on a case-by-case basis as field conditions warrant.

Other external obstructions (e.g. fences, walls, etc.) should be included in the cost estimate using an appropriate line item. In cases where no line item is applicable, the engineering contractor should include a non-standard line item to account for the cost(s). Examples may include the removal and/or resetting of a fence (non-standard line item) or the removal of sediment or debris that has buried the access (line item #17).

### 3.16 Riser Structure – Ladder/Steps Condition

The repair to, or replacement of, access ladders and steps for a facility should be included in the scope of work narrative using appropriate units (e.g. total number of steps to install or repair; total height of ladder; etc.). Inclusion in the cost estimate will most likely be through the addition of a non-standard line item.

### 3.17 Riser Structure – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.18 Principal Spillway Pipe – Spalling

Estimate preparation associated with spalling on the Principal Spillway Pipe (PSP) should be performed in the same manner as Subsection 3.7.

## Field Measurements and Work Order Preparation

### 3.19 Principal Spillway Pipe – Blockage

Blockages of the PSP should be estimated using cost estimate line item #17 on a per cubic yard basis. Field measurements of the diameter, length, and depth of material should be available when preparing the scope of work narrative and cost estimate. The volume of sediment may be estimated through the volume of a cylinder. Multiplying the total volume of the pipe by the percentage of the pipe blocked results in the volume of material to be removed within an acceptable tolerance.

*Example: approximately 33% of a 65'-18" PSP is blocked with sediment. The blockage is observed at both the upstream and downstream end of the PSP indicating the pipe is blocked for its entire length.*

$$\begin{aligned} \text{Calculate the total volume of the pipe:} \quad & V = \pi r^2 l \\ & V = \pi(0.75^2)(65) \\ & V = 114.86 \text{ ft}^3 \\ \text{Multiply the percentage blocked by the total volume:} \quad & V_{\text{remove}} = (33\%)(114.86 \text{ ft}^3) \\ & V_{\text{remove}} = 37.90 \text{ ft}^3 \\ & V_{\text{remove}} = \pm 38 \text{ ft}^3 \\ & V_{\text{remove}} = \pm 1.41 \text{ yd}^3 \end{aligned}$$

*This would result in an approximate cost of \$42.30 (1.41 yd<sup>3</sup> x \$30.00/yd<sup>3</sup>)*

Minor blockages of the PSP by materials such as sediment, leaves, and debris may be estimated using line item #18 (Power flush storm pipe) on a per linear foot basis. In these cases, the total length of the PSP should be used in the estimate.

### 3.20 Principal Spillway Pipe – Joint Failure

Estimate preparation associated with PSP joint failure should be performed in the same manner as Subsection 3.8.

### 3.21 Principal Spillway Pipe – Misaligned Joints

Pipes with minor misalignments (scored a 3) may be repaired through parging and the associated cost estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined from the field measurements (field measurements should include diameter of pipe and length of gap). It should be assumed that 1" on each side of the gap will also be parged. Therefore, the area to be parged may be determined by adding 2" to the gap width and multiplying this total width by the interior circumference of the pipe (where the interior circumference is  $C = \pi d$ ).

*Example: A 15" PSP is observed have misaligned joints that have a gap width equal to 1".*

$$\begin{aligned} \text{The total area to be parged is:} \quad & A = (1" + 2") \times (\pi \times 15") \\ & A = (3") \times (47.12") \\ & A = 141.36 \text{ sq. in.} \\ & A = 0.98 \text{ sq. ft.} \\ & A = 1 \text{ sq. ft.} \end{aligned}$$

*The cost may then be estimated to be approximately \$50.00 (unit cost equal to \$50.00 per sq. ft.)*

## Field Measurements and Work Order Preparation

Direct measurement of the misalignment is preferred; however, due to confined space entry restrictions, field crews are not always able to obtain direct measurements. In instances where the misalignment distance (gap width) is approximated, the cost estimate should still be prepared in the manner described above.

Furthermore, due to field limitations, misaligned joints may not be observed until returning to the office and editing the photos (i.e. a joint may not be readily visible in the field due to poor light, but a minor misalignment is revealed while processing/lightening the photos in the office). In this case, the gap width should still be approximated if feasible and the cost estimated in the manner described above. In those instances where a valid approximation of the total square footage to be parged may not be obtained, the repair should be estimated in accordance with cost estimate line item #20. The total cost will be estimated based upon a per joint cost equal to \$75.00.

Repair to pipes with major misaligned joints varies by the extent of repair necessary. Prior to preparation of the scope of work narrative, it is recommended the engineering contractor discuss the situation with MSMD staff. Major misalignments within the PSP for facilities with short pipe runs, small embankments, etc. will most likely be included in the scope of work narrative. Descriptions under the "Visual Condition Assessment Results" and "Scope of Work Description" should be limited to simple descriptions such as "Repair misaligned joints within PSP" so as to not prescribe means and methods to the contractor(s). The cost estimate portion, however, should include all required line items to complete the work. This may include line items to perform all aspects of the non-routine maintenance such as excavation, the removal and re-setting of the pipe, backfill, topsoil and seeding, restoration of disturbed areas, erosion control measures, etc. Guidance from MSMD staff regarding the approach to the preparation of the scope of work narrative is recommended in order to decrease unnecessary iterations of the estimate. The goal in this case would be to know prior to completion of the scope of work narrative whether a maintenance contractor would perform the work or if the repairs would require design and bidding under a MSMD project.

### 3.22 Principal Spillway Pipe – Separation

The minor separation of pipes (scored a 3) may be repaired through parging and the associated cost estimated on a square footage basis using line item #19 on the cost estimate worksheet. The total area to be parged should be determined from the field measurements (field measurements should include diameter of pipe and length of gap). It should be assumed that 1" on each side of the gap will also be parged. Therefore, the area to be parged may be determined by adding 2" to the gap width and multiplying this total width by the interior circumference of the pipe (where the interior circumference is  $C=\pi d$ ).

*Example: An 18" PSP is observed to be separated from the outfall structure by 2".*

$$\begin{aligned} \text{The total area to be parged is:} \quad & A = (2" + 2") \times (\pi \times 18") \\ & A = (4") \times (56.55") \\ & A = 226.19 \text{ sq. in.} \\ & A = 1.57 \text{ sq. ft.} \end{aligned}$$

*The cost may then be estimated to be approximately \$78.50 (unit cost equal to \$50.00 per sq. ft.)*

Similarly to Subsection 3.21, this is the preferred method of approximating the cost associated with the repair of minor pipe separation. However, due to confined space entry restrictions, field crews are not always able to obtain direct measurements. In instances where the separation distance (gap width) is approximated, the cost estimate should still be prepared in the manner described above.

Furthermore, due to field limitations, joints with separation may not be observed until returning to the office and editing the photos (i.e. a joint may not be readily visible in the field due to poor light, but a minor separation is revealed while

## Field Measurements and Work Order Preparation

processing/lightening the photos in the office). In this case, the gap width should still be approximated if feasible and the cost estimated in the manner described above. In those instances where a valid approximation of the total square footage to be parged may not be obtained, the repair should be estimated in accordance with cost estimate line item #20. The total cost will be estimated based upon a per joint cost equal to \$75.00.

Repair to major separation varies by the extent of repair necessary and the PSP material type. Prior to preparation of the scope of work narrative, it is recommended the engineering contractor discuss the situation with MSMD staff. Major separation within the PSP for facilities with short pipe runs, small embankments, etc. will most likely be included in the scope of work narrative. Descriptions under the “Visual Condition Assessment Results” and “Scope of Work Description” should be limited to simple descriptions such as “Repair separation within PSP” so as to not prescribe means and methods to the contractor(s). The cost estimate portion, however, should include all required line items to complete the work. This may include line items to perform all aspects of the non-routine maintenance such as excavation, the removal and re-setting of the pipe, the installation of a pipe collar, backfill, topsoil and seeding, restoration of disturbed areas, erosion control measures, etc. Guidance from MSMD staff regarding the approach to the preparation of the scope of work narrative is recommended in order to decrease unnecessary iterations of the estimate. The goal in this case would be to know prior to completion of the scope of work narrative whether a maintenance contractor would perform the work or if the repairs would require design and bidding under a MSMD project.

### 3.23 Principal Spillway Pipe – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.24 Outfall Downstream – Spalling

Estimate preparation associated with spalling on the downstream outfall structure should be performed in the same manner as Subsection 3.7.

### 3.25 Outfall Downstream – Undermining

Minor undermining should be based upon the required volume of material required to stabilize the ground beneath the outfall structure. The total volume may be estimated directly from the field measurements. This volume should then be inflated by 10% to account for soil compaction/shrinking/swelling. The cost to repair the undermining may then be estimated using line item #11 on the cost estimate worksheet.

Severe undermining may require the inclusion of non-standard line items in addition to line item #11. The undermining may be severe enough that there is damage to the outfall structure and/or pipe. Additional items such as repair to, or replacement of, the outfall structure or pipe should be included in the cost estimate through a non-standard line item as field conditions warrant.

### 3.26 Outfall Downstream – Separation

Minor separation between the PSP and downstream outfall structure should be included in the cost estimate using line item #20 (Parge existing joints or junction to structure). Major separation must be evaluated on a case-by-case basis to include all required items (either standard or non-standard line items) in the cost estimate. Items included in addition to line item #20 may include the replacement of the outfall structure and/or pipe, controlled fill to stabilize the area, and erosion control measures.



## Field Measurements and Work Order Preparation

### 3.27 Outfall Downstream – Erosion

Downstream erosion will most often be repaired through the installation of rip-rap in accordance with cost estimate line items #32 through #35. The area in need of repair may be obtained directly from the field measurements and estimated using a per square yard unit cost.

Other factors to consider while preparing the scope of work narrative and cost estimate for repair of eroded areas include:

- Minor areas of erosion to be stabilized through re-establishment of ground cover (e.g. minor erosion that may be repaired through seeding or sodding) should be included in the cost estimate using line items #56, #57, #58, and #59 as appropriate.
- The installation of erosion and sediment controls should be included in the cost estimate as warranted by field conditions. If deemed required, these items should be included using line items #51 - #55 as appropriate.
- Areas of significant erosion to be stabilized through the import and compaction of soil (in lieu of rip-rap) should be included using line #11 and estimated on a volume (cubic yards) basis.
- Consideration to the use of grouted rip-rap should be given for locations subject to flow with large volumes or high velocities.
- Areas of erosion located along tributaries or perennial streams may also warrant consideration of gabion baskets using cost estimate line item #38.

### 3.28 Outfall Downstream – Cave-In

Cave-ins not located on the dam will most often be repaired and stabilized using controlled fill and may be included in the cost estimate using line item #11. The field measurements should be used to obtain the total volume of the cave-in. This volume should then be inflated by 10% to account for soil compaction/shrinking/swelling.

### 3.29 Outfall Downstream – Blockage

Estimate preparation associated with blockage within the downstream outfall pipe(s) should be performed in the same manner as Subsection 3.19.

### 3.30 Outfall Downstream – Displaced Rip-Rap

The area of rip-rap to be installed should be taken directly from the field measurements, converted to a total area in square yards, and included in the cost estimate using line item #32, #33, #34, or #35 as applicable.

### 3.31 Outfall Downstream – Overgrown Vegetation

Overgrown vegetation in the vicinity of the outfall structure should be measured in the field in a manner similar to Subsection 3.15.

### 3.32 Outfall Downstream – Downstream Blockage

The removal of downstream blockages should be included in the cost estimate using the most appropriate line item based upon the type of blockage. Blockages caused by trees and debris, for example, may be included in the cost estimate on a cubic yard basis using line item #17. Other cases may involve using line item #69 for blockages caused by excessive amounts of sediment or line item #70 for blockages caused by rip-rap. Sound judgment should be used to apply the most applicable cost estimate item based upon the type of blockage, field measurements, and field observations.

## Field Measurements and Work Order Preparation

### 3.33 Outfall Downstream – Handrail Status

Replacement of handrail should be included in the cost estimate using the dimensions obtained in the field. The cost should be included in the estimate using either line item #46 or #47 for HR-1 or HR-2, respectively.

### 3.34 Outfall Downstream – Tree Removal

The descriptions included in the scope of work narrative for the removal of trees should provide the total number of trees to be removed and their associated diameters. Examples of such descriptions may be similar to “Remove 2-4” diameter trees at outfall” or “Remove 1-8” tree and 3-12” trees at outfall”.

Standard costs for tree removals (based upon diameter size) are included in the cost estimate worksheet in line items #2 through #6. The total number of trees to be removed in each size range should be included based upon the field measurements.

*[Note: It should be noted that the removal of trees does not include the removal of the stump or associated root system. In most cases, the tree will be cut at ground level and the stump/roots left in place. Individual cases requiring the removal of a tree’s stump should be included in the cost estimate using line items #7 and/or #8 as applicable.]*

### 3.35 Pond Floor – Silted-In/Debris 75%

Typically, this item will not be included in the scope of work estimate as the removal of sediment from a pond that is 75% silted in is performed under a separate MSMD project. Should MSMD staff determine a facility is in need of sediment removal, the maintenance shall be performed under a separate sediment removal project with pre- and post-removal as-built surveys. In the event that this maintenance item is included in the scope of work narrative and cost estimate, the total sediment to be removed should be estimated in cubic yards and included in the cost estimate using line item #69.

### 3.36 Pond Floor – Trash/Debris Removal

Trash and debris removal should be estimated using line item #17 on the cost estimate. The total cubic yards of material to be removed should be able to be directly obtained from the field measurements.

### 3.37 Pond Floor – Tree/Vegetation Removal

Estimate preparation for the removal of trees and vegetation on the pond floor should be performed in a similar manner to Subsection 3.15 and Subsection 3.34.

### 3.38 Pond Floor – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.39 Wetland Habitat – Trash and Debris

Trash/debris removal within a wetland habitat should be performed in a similar manner to Subsection 3.36.

## Field Measurements and Work Order Preparation

### 3.40 Wetland Habitat – Bare Spots

The total area of the bare spot within the wetland habitat should be determined in square yards based upon field measurements. The cost estimate may then be prepared using line item #60 and line item #61 if the installation of topsoil is necessary based upon field conditions.

### 3.41 Wetland Habitat – Sediment Deposition

Estimate preparation for the removal of sediment within a wetland habitat should be performed in a similar manner to Subsection 3.35 and included in the cost estimate using line item #69.

### 3.42 Wetland Habitat – Condition of Plants

Field measurements should include a total count of dead and/or dying trees and shrubs. The replacement of these dead or dying trees and shrubs should be included in the cost estimate using line items #64 and #65.

### 3.43 Wetland Habitat – Erosion

Estimate preparation for erosion within a wetland habitat should be performed in a similar manner to Subsection 3.27.

### 3.44 Wetland Habitat – Ponding Water

Ponding water results from a separate, underlying maintenance item and should be included within the scope of work narrative and cost estimate under the applicable subsection(s) from this document.

### 3.45 Wetland Habitat – Undesired Vegetation

Undesired vegetation removal should be included in the scope of work narrative based on an area, which may be computed directly from field measurements. The removal of the undesired vegetation should be included in the cost estimate using line item #1 for general removal operations. Further coordination with MSMD staff is recommended for non-typical scenarios that may involve chemical treatment of the area or coordination with a certified arborist. Any additional items needed should be included in the cost estimate as a non-standard item.

### 3.46 Wetland Habitat – Forebay Condition

Similarly to Subsection 3.44, a facility's forebay condition is not necessarily an item that will be included in the scope of work. Any maintenance items observed should be included in the scope of work narrative using the appropriate subsection(s) contained herein and included in the cost estimate using an appropriate line item.

### 3.47 Wetland Habitat – Marsh Condition

The plans of record should be reviewed to determine the design and maintenance considerations associated with a designed marsh area. Similarly to Subsection 3.44 and Subsection 3.46, field measurements for any maintenance items within the marsh area should be in accordance with the appropriate subsection(s) contained herein.

### 3.48 Wetland Habitat – Micropool Condition

Similarly to ponding water, forebay condition, and marsh condition, the micropool condition is not necessarily an item that will be included in the scope of work. The field conditions of the forebay should be compared against the design information in the plans of record. Maintenance items and/or changes to the design documented in the field notes should be reviewed for inclusion in the scope of work in accordance with the appropriate subsection(s) contained herein.

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### 3.49 Wetland Habitat – Posted Sign(s) Condition

Estimate preparation associated with wetland habitat signage should be performed in a similar manner to Subsection 3.3. The replacement of missing or damaged water quality signs should be included in the cost estimate using line item #41.

### 3.50 Wetland Habitat – Tree Removal

Estimate preparation for the removal of trees within the wetland habitat should be performed in a similar manner to Subsection 3.34.

### 3.51 Wetland Habitat – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.52 Dam / Berm – Toe Soft Spots

Similarly to ponding water, forebay condition, marsh condition, and micropool condition, dam/berm soft spots is not necessarily an item that will be included in the scope of work since it is caused by a failure of something else. Maintenance associated with the repair of soft spots should be included in the scope of work in accordance with the appropriate subsection(s) contained herein. Associated costs included in the cost estimate should capture the necessary repairs to correct the problem(s) causing the toe soft spots and the repair/stabilization of the soft spots (line item #11).

### 3.53 Dam / Berm – Slope Erosion

Estimate preparation for the repair to slope erosion on the dam/berm should be performed in a similar manner to Subsection 3.27. Special attention should be to the plans of record to determine any geotechnical requirements associated with the fill/compaction associated with the dam.

### 3.54 Dam / Berm – Bare Spots

Bare spots located on the dam/berm will be repaired through either seeding or sodding. The total area (square yards) may be determined directly from the field measurements. Areas to be repaired through seeding should be included in the scope of work narrative and cost estimate using line item #58 or #59, while areas to be repaired through the installation of sod should be included using line item #56 or #57. Consideration should also be given to whether or not conditions warrant erosion control measures (such as straw, jute mesh, etc.).

### 3.55 Dam / Berm – Cave-In

Estimate preparation for cave-ins encountered on the dam/berm should be performed in a similar manner to Subsection 3.28. Since the cave-in is located on the dam/berm, the establishment of ground cover should be promoted. A minimum 6" of topsoil should be included using cost estimate line item #61 and seeding for the area should be included using line item #58. Since the cave-in is located on the dam embankment, structural integrity is critical. As conditions warrant, significant cave-ins should be repaired through the use of flowable fill (soil-cement slurry) and estimated using line item #12 in the cost estimate.

## Field Measurements and Work Order Preparation

### 3.56 Dam / Berm – Animal Holes

The repair and stabilization of animal holes on the dam/berm will be repaired in the same manner as cave-ins. Therefore, this item should be prepared in a similar manner to Subsection 3.28 and Subsection 3.55.

### 3.57 Dam / Berm – Tree Removal

Estimate preparation for the removal of trees on the dam/berm should be performed in a similar manner to Subsection 3.34.

### 3.58 Dam / Berm – Overgrown Vegetation

Overgrown vegetation on the dam/berm should be described and estimated in a manner similar to Subsection 3.15.

### 3.59 Dam / Berm – Alterations

Any alterations to the dam/berm not shown on the plans of record should be documented and estimated in accordance with the most appropriate subsection(s) discussed herein.

### 3.60 Dam / Berm – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.61 Emergency Spillway – Erosion

Areas of erosion within the emergency spillway should be measured in a similar manner to Subsection 3.27. This is not applicable to combined principal/emergency spillway structures.

### 3.62 Emergency Spillway – Bare Spots

Bare spots observed within the emergency spillway should be measured in a similar manner to Subsection 3.54. This is not applicable to combined principal/emergency spillway structures.

### 3.63 Emergency Spillway – Overgrown Vegetation

The location(s) of any overgrown vegetation observed on the emergency spillway should be described and estimated in a manner similar to Subsection 3.15.

### 3.64 Emergency Spillway – Blockage

Depending upon the type of emergency spillway, the scope of work preparation associated with blockages differs slightly. Blockages of emergency spillways draining via overland flow should be prepared in accordance with Subsection 3.32 and Subsection 3.10. Emergency spillways that are structures and drain via a closed conduit system should be evaluated and estimated in accordance with Subsection 3.19.

### 3.65 Emergency Spillway – Tree Removal

Estimate preparation for the removal of trees on the emergency spillway should be performed in a similar manner to Subsection 3.34.

## Field Measurements and Work Order Preparation

### 3.66 Emergency Spillway – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.67 Upstream Inflows – Spalling

Estimate preparation associated with spalling on upstream inflows should be performed in the same manner as Subsection 3.7.

### 3.68 Upstream Inflows – Undermining

Undermining observed at upstream inflows should be measured in a similar manner to Subsection 3.25.

### 3.69 Upstream Inflows – Separation

Separation associated with upstream inflows should be prepared in a similar manner to Subsection 3.22 (separation observed inside the pipe) and Subsection 3.26 (separation observed between the structure and pipe).

### 3.70 Upstream Inflows – Erosion

Areas of erosion in the vicinity of any upstream inflows should be described and prepared in a similar manner to Subsection 3.27.

### 3.71 Upstream Inflows – Cave-In

Estimate preparation for cave-ins observed in the vicinity of any upstream inflows should be performed in a similar manner to Subsection 3.28.

### 3.72 Upstream Inflows – Blockage

Blockages observed within the pipes for any upstream inflow should be described and estimated in a similar manner to Subsection 3.19.

### 3.73 Upstream Inflows – Displaced Rip-Rap

Displaced rip-rap observed at upstream inflows should be described and estimated in a similar manner to Subsection 3.30.

### 3.74 Upstream Inflows – Overgrown Vegetation

Overgrown vegetation observed at any upstream inflow should be described and estimated in a similar manner to Subsection 3.15.

### 3.75 Upstream Inflows – Outflow Obstruction

Outflow obstructions located at upstream inflows may be treated as downstream blockages and should be described and estimated in a similar manner to Subsection 3.32.

### 3.76 Upstream Inflows – Handrail Status

The handrail status at upstream inflows should be evaluated in a similar manner to Subsection 3.33.



## Field Measurements and Work Order Preparation

### 3.77 Upstream Inflows – Misaligned Joints

Misaligned joints observed at upstream inflows should be described and estimated in a similar manner to Subsection 3.21.

### 3.78 Pond Flow Low Flow – Sedimentation

The volume of sediment present within the low flow ditch system may be determined directly from the field measurements (measurements should include the depth of sediment, the total distance the sediment is observed, and the ditch geometry). The total amount of sediment should be described in cubic yards in the scope of work narrative and included in the cost estimate using line item #69.

### 3.79 Pond Flow Low Flow – Detoured Flow Line

Detoured flow lines result from separate, underlying maintenance items and should be included within the scope of work narrative and cost estimate under the applicable subsection(s) from this document.

### 3.80 Pond Flow Low Flow – Obstructions

Obstructions in the low flow ditch system may be thought of as anything impeding the flow of water (the only exception being sediment since this will be prepared in accordance with Subsection 3.78). Obstructions should be described and estimated on a case-by-case basis. Inspection crews will need to use their discretion based upon field conditions to determine the most appropriate means of quantifying the obstruction. Descriptions and units of measure in the scope of work narrative and inclusion in the cost estimate should be done in accordance with the most appropriate subsection contained herein. Examples include, but are not limited to rip-rap (measured in square yards and estimated using cost estimate line item #70) and trash/debris (measured in cubic feet and estimated using cost estimate line item #17). Engineering contractors should use sound judgment to apply the most applicable line item(s) in the cost estimate based upon the nature of the obstruction.

### 3.81 Pond Flow Low Flow – Erosion/Trenching/Roots

Erosion observed along or beside a low flow ditch system should be described and estimated in accordance with Subsection 3.27. Erosion that has progressed and is causing undermining and/or trenching along or underneath the ditch system should be described and estimated in a similar manner to Subsection 3.25. Roots in the vicinity that are causing damage to the low flow ditch system, or impeding the flow of water within the ditch system, will require removal. The removal of the tree should be prepared in accordance with Subsection 3.34, but will not include any estimate associated with the removal of the root system. For estimating purposes, it should be assumed the root(s) causing the maintenance item will be cut 10' from the ditch and removed.

The cost estimate should include any required excavation (line items #9 and #10), backfill (line item #11), and stump removal if warranted by field conditions (line item #7 or #8).

### 3.82 Encroachments / Modifications – Pond

Items under this category falling under the County's maintenance responsibility should be included in the scope of work narrative and cost estimate under the most applicable line item(s). However, it is important to note that encroachments and modifications to ponds are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

## Field Measurements and Work Order Preparation

### 3.83 Encroachments / Modifications – Embankments

Items under this category falling under the County's maintenance responsibility should be included in the scope of work narrative and cost estimate under the most applicable line item(s). However, it is important to note that encroachments and modifications to embankments are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

### 3.84 Encroachments / Modifications – Spillway

Items under this category falling under the County's maintenance responsibility should be included in the scope of work narrative and cost estimate under the most applicable line item(s). However, it is important to note that encroachments and modifications to spillways are typically noted in the visual assessment so that MSMD personnel are aware of the conditions, but usually do not require any actual maintenance to be performed. Encroachments are typically privately owned and, therefore, would be adjusted, relocated, or removed at the owner's expense. Encroachments/modifications to the pond should be relayed to MSMD personnel and only included in the scope of work narrative when directed to do so by MSMD staff.

### 3.85 Encroachments / Modifications – Modifications

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis.

### 3.86 Mosquito Habitat Location – Pond Floor

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis. Conditions should be evaluated to determine whether an area requires treatment/mosquito control or if the situation is being caused by an underlying maintenance item. Areas of mosquito habitat to be treated should be added to the cost estimate using a non-standard line item. Coordination with MSMD staff in these situations is recommended.

### 3.87 Mosquito Habitat Location – Outfall

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis. Conditions should be evaluated to determine whether an area requires treatment/mosquito control or if the situation is being caused by an underlying maintenance item. Areas of mosquito habitat to be treated should be added to the cost estimate using a non-standard line item. Coordination with MSMD staff in these situations is recommended.

### 3.88 Mosquito Habitat Location – Other

Engineering contractors should use sound judgment to include any maintenance items scored under this category using the appropriate line item(s) in the cost estimate worksheet. Non-standard line items should be added to the cost estimate as deemed necessary on a case-by-case basis. Conditions should be evaluated to determine whether an area requires treatment/mosquito control or if the situation is being caused by an underlying maintenance item. Areas of mosquito habitat to be treated should be added to the cost estimate using a non-standard line item. Coordination with MSMD staff in these situations is recommended.

### 4 Submittal Procedure

The fourth goal of this document is to standardize the procedure for identifying non-routine maintenance needs at County owned and maintained facilities. It is the goal of Fairfax County MSMD to streamline the identification, documentation, scheduling, and completion of non-routine maintenance at these facilities. It is the intent of this standard procedure to reduce the time between the completion of routine maintenance and the scheduling and completion of non-routine maintenance. In order to do so, there are a number of milestones that must be met by those involved (namely the general contractor, engineering contractor, and MSMD staff). The following outlines the steps from the completion of routine maintenance to the scheduling of any required non-routine maintenance, and duration of each, so that the entire process is limited to approximately two (2) months:

1. Routine maintenance is performed by general contractor under the County assigned mow package.
2. Within seven (7) days of the completion of the routine maintenance, the engineering contractor completes the visual assessment for the facility, completes the inspection forms, and obtains all field measurements/data required for the preparation of the scope of work narrative and cost estimate. *[Cumulative time = 7 days or 0.25 month]*
3. Following completion of the visual assessment field work, the engineering contractor prepares the scope of work narrative and cost estimate and submits all deliverables to MSMD staff for review. Electronic submittal of all deliverables should be made within 14 – 21 days from the date of inspection. *[Cumulative time = 28 days or 1.0 month]*
4. MSMD personnel review the inspection form, photos, scope of work narrative, and cost estimate within seven (7) days of receiving the electronic submittals from the engineering contractor. Following review and approval, MSMD personnel distribute the scope of work narrative in accordance with the routing method determined by MSMD staff. *[Cumulative time = 35 days or 1.17 months]*
5. MSMD receives cost proposal from general contractor(s) within seven (7) days of distribution. *[Cumulative time = 42 days or 1.40 months]*
6. Within seven (7) days from receipt, MSMD staff finalizes authorization for completion of the work and notifies the landowner on which the work is to be performed. *[Cumulative time = 49 days or 1.63 months]*
7. Fourteen (14) days from final authorization the non-routine maintenance work is scheduled for completion. *[Cumulative time = 63 days or 2.10 months]*

A graphical representation of this Public Pond Non-Routine Maintenance Work Flow Process may be found in Appendix C.

## Appendix A: Scope of Work Narrative



Fairfax County Maintenance and Stormwater Management Division  
Non-Routine Maintenance Scope of Work

0000DP  
00/00/1900



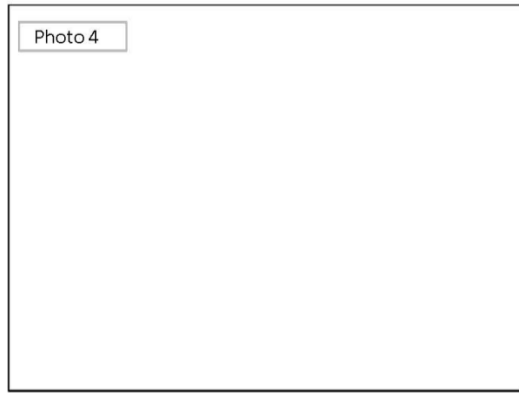
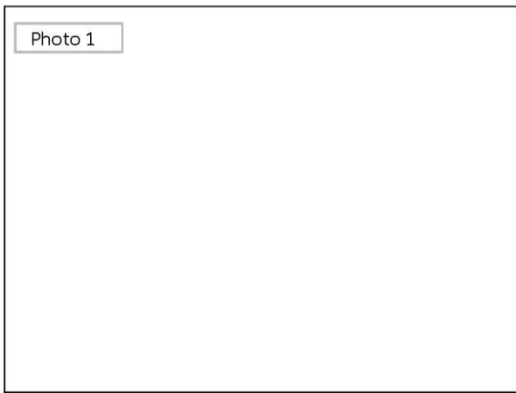
Routing:

**VISUAL CONDITION ASSESSMENT RESULTS**



1. (See photo -)
2. (See photo -)
3. (See photo -)
4. (See photo -)
5. (See photo -)
6. (See photo -)

**SCOPE OF WORK DESCRIPTION**

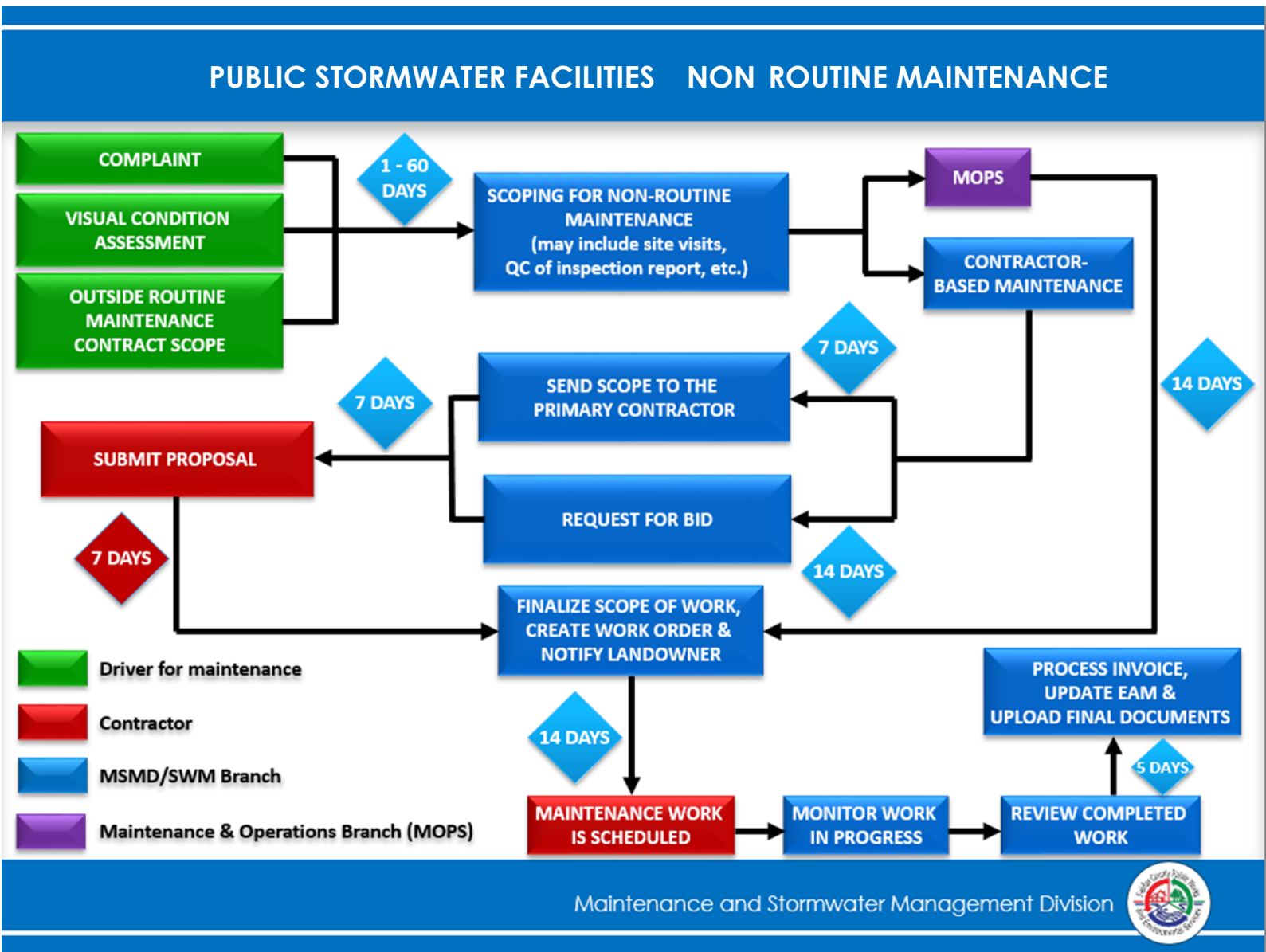
- 1
- 2
- 3
- 4
- 5
- 6



Appendix B: Non-Routine Maintenance Cost Estimate

NON-ROUTINE MAINTENANCE COST ESTIMATE					
				xxxxx\$ / xxxxDP Mow Package # XXX (FYXX) Date of Inspection: xx/xx/20xx Date of Estimate: xx/xx/20xx Estimate Prepared by: XXX	
ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
1	Mowing / Clearing (includes removal & proper disposal of all woody stock, brush, & trees up to 2-inch diameter)		0.1 acre	\$ 74.00	\$ -
2	Pond Control Structure/Riser Clearing (includes removal & disposal of trash, debris, floatables, & other material from directly around and on top of the control structure/riser)		CY	\$ 30.00	\$ -
3	Pond Low-Flow Channel Clearing (25' Radius) (includes removal & disposal of trash, debris, floatables, & other material from pond channels & trash rack within 25' radius of control structure/riser)		EA	\$ 181.00	\$ -
4	Shoreline Clean-Up (includes removal & disposal of trash & debris from 15' of wet side and 15' of dry side of WSE)		0.1 acre	\$ 750.00	\$ -
5	Trash/Debris Removal & Disposal		CY	\$ 164.00	\$ -
6	Repair/Replace Facility Sign		EA	\$ 247.00	\$ -
7	Repair/Replace Facility Sign and Post Installation		EA	\$ 329.00	\$ -
16	Hydroseeder (400 - 600 Gallon) with Upland Seed Mix		HR	\$ 217.00	\$ -
17	Hydroseeder (400 - 600 Gallon) with Wetland Seed Mix		HR	\$ 411.00	\$ -
18	Hydroseeder (400 - 600 Gallon) w/ Co. Supplied Seed Mix		HR	\$ 90.00	\$ -
29	Pond Low-Flow Channel Clearing (per 25') (includes removal & disposal of sediment, trash, debris, floatables, & other material using handheld equipment from the pond low-flow channel)		25 FT	\$ 156.00	\$ -
30	Tree Removal (2" to 6" DBH)		EA	\$ 1,316.00	\$ -
31	Tree Removal (7" to 12" DBH)		EA	\$ 2,961.00	\$ -
32	Tree Removal (13" to 24" DBH)		EA	\$ 4,930.00	\$ -
33	Tree Removal (25" to 36" DBH)		EA	\$ 6,250.00	\$ -
34	Stump Removal & Grinding (up to 12")		EA	\$ 576.00	\$ -
39	Excavation of Sediment (includes removal & disposal of sediment from the bottom of the existing pond using mechanical means; assumed potentially hazardous waste)		CY	\$ 150.00	\$ -
40	Animal Burrow Repair		EA	\$ 1,316.00	\$ -
53	VDOT Class I Rip-Rap with Fabric Liner		TON	\$ 156.00	\$ -
54	VDOT Class II Rip-Rap with Fabric Liner		TON	\$ 176.00	\$ -
58	Concrete Removal and Disposal		SF	\$ 39.00	\$ -
59	Grouting Cracks and Joints		LF	\$ 189.00	\$ -
62	Parging (per 50lb bag)		EA	\$ 452.00	\$ -
70	Seed Mix (includes straw mulch and water)		0.1 acre	\$ 286.00	\$ -
79	Topsoil (3")		CY	\$ 74.00	\$ -
N/A	Remove & Dispose of Sediment / Debris from Inside Drainage Structures and Pipes		CF	\$ 30.00	\$ -
N/A	Install Grouted Class I Rip-Rap		SY	\$ 90.00	\$ -
N/A	Install Grouted Class II Rip-Rap		SY	\$ 141.00	\$ -
N/A	Fabricate & Install Low-Flow BMP Plate		EA	\$ 500.00	\$ -
N/A	Fabricate & Install Low-Flow Trash Rack		EA	\$ 500.00	\$ -
N/A	Install HR-2 Handrail		LF	\$ 100.00	\$ -
N/A	Install Access Road Gate		EA	\$ 2,100.00	\$ -
N/A	Install Post and Cable Barrier		EA	\$ 750.00	\$ -
N/A	Install Removable Locking Bollard		EA	\$ 950.00	\$ -
				Sub-Total =	\$ -
				Mobilization (5%) =	\$ -
				<b>Total Estimated Cost =</b>	<b>\$ -</b>
Last Update:		10/13/2020			

Appendix C: Public Stormwater Facilities-Non-routine Maintenance





Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P11

List of the number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment, as well as the number of impervious, pervious and total acres treated by stormwater controls.

VSMP Permit Number VA0088587  
9-30-2022

Fairfax County 2022 MS4 Program Plan and Annual Report  
Appendix P11

A list of the number of impervious, pervious and total acres served by the MS4 for each Fairfax County local watershed, sixth order HUC and Chesapeake Bay segment, as well as the number of impervious, pervious and total acres treated by stormwater controls can be found in the tables below.

**Area Served by the MS4 as of March 31, 2019**

Table 1. Local Watershed (acres)

Watershed	Impervious	Pervious	Total
Accotink Creek	3,491.0	6,927.8	10,418.7
Belle Haven	172.6	375.7	548.2
Bull Neck Run	72.0	307.3	379.3
Bull Run	4.5	20.7	25.2
Cameron Run	2,303.8	5,844.5	8,148.2
Cub Run	2,963.0	5,607.4	8,570.4
Dead Run	256.5	600.5	857.0
Difficult Run	2,722.0	8,430.0	11,152.0
Dogue Creek	984.7	2,512.6	3,497.4
Four Mile Run	336.2	338.8	675.0
Horsepen Creek	754.2	1,614.8	2,369.0
Johnny Moore Creek	26.7	225.9	252.6
Kane Creek	3.6	11.4	15.0
Little Hunting Creek	779.3	1,955.8	2,735.0
Little Rocky Run	591.0	1,508.7	2,099.7
Mill Branch	220.8	604.4	825.2
Nichol Run	42.5	341.0	383.5
Occoquan	21.4	119.7	141.0
Pimmit Run	755.4	2,002.1	2,757.4
Pohick Creek	2,316.6	6,068.3	8,385.0
Pond Branch	49.1	347.7	396.7
Popes Head Creek	194.3	948.0	1,142.3
Sandy Run	18.0	113.9	131.9
Scotts Run	482.4	737.2	1,219.6
Sugarland Run	654.0	1,729.8	2,383.9
Turkey Run	39.7	119.3	159.0
Wolf Run	10.0	66.5	76.5

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Appendix P11

Table 2. Sixth Order Hydrologic Unit Code (HUC) (acres)

VAHU6	Impervious	Pervious	Total
PL18	776.0	1,661.7	2,437.7
PL21	647.6	1,697.7	2,345.3
PL22	2,738.0	8,441.8	11,179.8
PL23	945.1	2,459.8	3,404.8
PL24	752.6	1,995.2	2,747.8
PL25	336.2	338.8	675.0
PL26	2,383.5	5,964.7	8,348.2
PL27	983.8	2,520.5	3,504.3
PL28	873.4	2,210.2	3,083.6
PL29	2,322.0	6,075.7	8,397.7
PL30	3,474.6	6,909.0	10,383.6
PL44	4.5	20.7	25.2
PL45	2,873.5	5,401.5	8,275.0
PL46	881.2	2,868.2	3,749.4
PL47	28.0	180.4	208.4
PL48	245.3	733.6	978.9

Table 3. Chesapeake Bay Segment (acres)

Chesapeake Bay Segment	Impervious	Pervious	Total
POTTF_DC	747.4	1,975.2	2,722.6
POTTF_MD	5,149.0	14,390.4	19,535.9
POTTF_VA	14,369.8	33,116.4	47,486.2

Table 4. Countywide (acres)

Impervious	Pervious	Total
20,265.3	49,479.5	69,744.8

Fairfax County 2022 MS4 Program Plan and Annual Report  
Appendix P11

**Area Treated by Stormwater Controls as of March 31, 2019**

Table 5. Countywide (acres)

<b>Impervious</b>	<b>Pervious</b>	<b>Total</b>
12,651.3	17,018.7	29,670.0

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P12

Standard Operating Procedures for the MS4 Wet Weather  
Screening Program

VSMP Permit Number VA0088587  
9-30-2022



**Department of Public Works and Environmental Services**  
**POLICIES AND PROCEDURES**

Memorandum No.: SWPD16-01

**SUBJECT: Standard Operating Procedures for the MS4 Wet Weather Screening Program**

Effective: 01/29/2016

Revised: 12/21/2020

Approval: 

**I. Purpose**

Under the MS4 permit, Fairfax County is required to investigate and address areas that are suspected to be contributing excess levels of pollutants to the MS4 by conducting wet weather screening. Sampling stormwater runoff from areas that may be contributing excess pollution is a method used as a first step to locate, isolate, and remediate areas that may be responsible for polluted stormwater discharges that may ultimately impact the quality of receiving waters. This SOP describes Fairfax County's program for wet weather screening.

Fairfax County's 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes the following provisions for wet weather screening (Part I, Section B.2.1.2):

*Wet Weather Screening Program: In addition to the monitoring required in Part I.C., the permittee shall continue to investigate, and address areas within their jurisdiction that are suspected to be contributing excessive levels of pollutants to the MS4. No later than 12 months after the effective date of this permit, the permittee shall develop written procedures for a wet weather screening program which shall include standard operating procedure to be used for initial screening and follow-up purposes. The written procedures shall be incorporated as part of the MS4 Program Plan.*

**SPECIFIC REPORTING REQUIREMENTS:**

- *No later than 12 months after the effective date of the state permit, the permittee shall submit to the Department the written procedures for wet weather screening.*
- *Beginning with the annual report due October 1, 2017, each annual report shall include a list of locations upon which wet weather screening was conducted, the results, weather conditions at the time sample was collected to include date and approximate time of most recent storm event preceding sample collection, long term trends analyses, and any follow-up actions including maintenance and/or repair of infrastructure or outfalls performed as a result of the wet weather screening.*

This Wet Weather Screening Program Standard Operating Procedure (SOP) describes Fairfax County's site selection, field reconnaissance, and wet weather screening protocols for evaluating areas that may be contributing stormwater pollution to the County's MS4 and provides a framework for full compliance with the above MS4 permit requirements.

This document contains the following:

- Site Selection and Priority Determination
- Field Protocol for Wet Weather Outfall Screening
- Data Management/Quality Control
- Notification/Follow-Up Procedures
- Monitoring Reports
- References.



## II. **Site Selection and Priority Determination**

### **a. General Factors for Identifying Candidate Sites**

Fairfax County seeks to identify and monitor the most likely sources of excessive levels of pollutants entering the MS4 system. The County uses available data to target appropriate sites for investigation and possible wet weather screening. Categories of criteria that are used to identify suitable areas for wet weather screening during the desktop GIS analysis are described below.

#### **i. MS4 Service Area**

The County focuses wet weather screening activities on those areas that are regulated under its VSMP MS4 discharge permit. The County's MS4 service area consists of those drainage areas that discharge to an MS4 outfall that is owned or operated by Fairfax County. An MS4 outfall is defined as a point of discharge from a man-made channel or conveyance to surface waters of the State.

#### **ii. Categorization of Parcels using Land Use**

One key factor in selecting candidate areas for monitoring is land use, as represented by the County's land use codes for parcels. These codes are assigned when individual parcels are created. Each code has been assigned an index value ranging from 1 to 4 (Versar 2006) that represents the relative potential for parcels with that code to discharge pollutants during wet weather (Appendix A). A brief description of the index appears in Table 1. Index values have been assigned based on general expectations for a land use class, to provide a practical means for targeting field investigations to areas of greatest concentrations of land use classes that are most likely to be sources of pollution via runoff. This has been done to facilitate a countywide approach to priority service area selection using GIS. For example, in general, an automotive repair facility (Index Value 3) would be a more likely source of runoff pollution than a single-family residence (Index Value 1).

Land uses are organized into index values according to the predominant activities occurring on the parcel that consist of (a) transferring, storing, or employing hazardous materials in an industrial, manufacturing, or treatment process (Index Value 4), (b) occurrences of drips, spills, or deposits of petroleum or commercial products on impervious areas that are exposed to precipitation and can be subsequently carried to the MS4 (Index Value 3), c) permanent storage of retail inventory or commercial waste in centralized, exposed areas and which may leach onto impervious surfaces (Index Value 2), and d) occasional exterior use and storage of household chemicals and waste (Index Value 1).

Examples of sites that could contribute polluted runoff to a given service area include carwashes, gas stations, other automotive repair facilities, scrap yards, truck stops, shopping centers, restaurants, golf courses, home improvement retailers, plant nurseries and garden centers, research and testing facilities, industrial parks, mass transit terminals and maintenance facilities, pipeline rights-of-way and pressure control stations, and

manufacturers. Information to identify such sites within the county’s jurisdiction is available from several sources.

**Table 1: General index of potential for pollutant discharge during wet weather based on land use**

Index Value	Description
1	No or insignificant potential (e.g., residences, schools, offices)
2	Slight risk (e.g., department stores, supermarkets, and other retail outlets with no obvious potential to pollute)
3	Moderate risk (e.g., warehouses, mass transit rights-of-way and terminals, restaurants, golf courses, and gasoline stations)
4	High risk (e.g., manufacturing, industry, waste treatment and disposal, utility rights-of-way)

**iii. Easement**

Maintenance and repair easements are required to allow the County to legally enter the storm drain network for the purpose of conducting monitoring of runoff. The easements allow the County and its agents to access portions of the MS4 on private property for the purposes of this work.

**iv. Industrial and Commercial Facilities**

The County has identified industrial and commercial facilities (ICFs) that operate within its boundaries. When businesses are established, they are assigned a standard industrial classification (SIC) code that describes the nature of the business. As part of this site selection methodology, certain SIC codes have been identified that have an elevated potential for discharge of polluted stormwater runoff from the premises. Examples of businesses that have the SIC codes of elevated concern are: automobile service and repair, recreation, wholesale chemicals and cleaning, retail shopping centers, industrial processes, and appliance repair. The list of SIC codes that occur within the Fairfax County MS4 service areas and have been included in the wet weather site selection process can be found in Appendix B.

**b. Site Selection Protocol**

The wet weather screening program employs a multi-factored scoring procedure to identify specific MS4 drainage areas that have the greatest potential for contributing polluted runoff. The method uses a variety of GIS data and supplemental information to rank parcels. Table 2 lists Fairfax County’s GIS data relevant to this effort.

## i. Site Selection Metrics

**Table 2: GIS layers and data to be used to select and prioritize industrial/commercial parcels for monitoring**

Description	Dataset Name
MS4 service area	MS4_Service_Area
Industrial and commercial facilities	STWMGR_IHRR_FACILITIES_SITES
Orthophotography	2017_orthophoto_1ft.sid
Fairfax hydrography layer	StormNet
Current land use	IPLS_IPLS_GENER_EXIST_LAND_USE
Landcover	landcover_2015_fairfaxcounty.tif
Easements	StormNet
Stormwater network - arcs	StormNet
Stormwater network - point features	StormNet
VPDES industrial permitted facilities	VPDES_parcel
Major transportation areas (% Roadways)	Roadways__Bridges
Minor transportation areas (% Roadways)	Driveways__Parking_Lots

The goal of the site selection process is to target areas that have the greatest potential for discharging excessive levels of pollutants to the MS4. Incorporating a systematic strategy in the selection process increases the likelihood of finding possible pollution sources while reducing the amount of staff time spent at unlikely sites. Four distinct metrics were selected to prioritize potentially problematic MS4 drainage areas:

- a. ICF Points – Industrial and commercial facilities represent a broad class of businesses and land uses with the potential to pollute stormwater.
- b. Index Value Parcels – Index values ranging from 1 to 4 were assigned to each parcel in an extensive review of land use codes (LUC) – with Value 4 parcels having the greatest potential to contribute pollution to the MS4 (Table 3). While LUCs should be updated based on the most up-to-date data, the original LUC value assignment determinations conducted by Versar and the County in 2006 remains applicable for this site selection process.
- c. Impervious and Turf– Imperviousness is a well-established metric for measuring the impact of land use changes on aquatic systems. Areas of turf and grass can also exhibit high concentrations of pollutants such as pesticides and nutrients. Combining these two land coverage types creates a metric focused on evaluating the scale of land use changes within each drainage area.
- d. Roadways - Percentage of major and minor roadways and parking lots within each drainage area. This variable serves as a proxy for vehicle use and storage, as well salt application and storage, as elevated conductivity levels in local streams has been found to be linked to high road density.

**Table 3: Index value 4 land uses within Fairfax County MS4 service areas**

<b>Land Use Code</b>	<b>Description</b>
111	Planned industrial park
112	Industrial conglomeration
121	Durable manufacturing
131	Nondurable manufacturing
135	Printing and publishing
140	Research and test, where not in office building or office park
160	Contract construction
190	Other industrial NEC
221	Electric, including transmission rights-of-way, generation plants, regulating
222	Gas, including pipeline rights-of-way, treatment plants, storage, irrigation distributional channels, pressure control stations, etc.
223	Water, including pipeline rights-of-way, treatment plants, storage, irrigation distributional channels, pressure control stations, etc.
224	Sewage, including treatment plants, pressure control stations, etc.
226	Pipeline rights-of-way and pressure control stations, NEC (such as petroleum)

**ii. Site Selection Prioritization Process**

The site selection procedure is detailed below. This procedure may be modified over time as additional data are gathered or as the needs of Fairfax County’s program change. A graphical illustration of the site selection process is provided in Appendix C.

**Part 1: Calculate selection metric values.**

1. Overlay MS4 drainage areas with metrics:
  - a. **ICF Points**
  - b. **Index Value Parcels**
  - c. **Impervious and Turf**
  - d. **Major and Minor Roadways**
2. Conduct a spatial join with the ICF Points (metric **a**). Count the points within each drainage area and divide the count by the acreage to calculate a metric density for each drainage area.

*Result: ICF Density*

3. Conduct a spatial join for the Index Values Parcels (metric **b**). Count the number of each Index Value (1-4) within each drainage area. To prioritize higher pollution potential parcels, create a weighted sum of the parcels in each drainage area, using the following weights for each index value, and divide the count by the acreage to calculate a metric density for each drainage area:
  - i. Value 4 weight – 1.00
  - ii. Value 3 weight – 0.50
  - iii. Value 2 weight – 0.25
  - iv. Value 1 weight – 0.00

*Result: Weighted Index Value Density*

4. Conduct a spatial join with the Impervious and Turf and Major and Minor Roadways land use and land cover layers (metric **c** & **d**). Estimate the acreage within each drainage and divide by the total area to calculate the percent of the total drainage composed by metric.

*Result: Percent Impervious and Turf; Percent Roadway*

**Part 2: Metric value scaling.**

Scaling each metric so that it ranges from 0-1 allows each of the four metrics to be compared with each other directly by looking at their values relative to their range. From Part 1, for values in each metric, subtract the minimum value of the metric and then divide by the difference between the maximum and minimum of the metric. When the minimum value of a metric is 0, this simplifies to dividing each value by the maximum value of the metric.

**Part 3: Assign weighted values to each metric.**

Assign weights to each of the four metric values calculated in Part 2. Weights allow for different scenarios that highlight sites more suitable to monitor for different pollutants. Weights for each metric must be between 0 and 1.0, and sum to 1.0. Even weights of 0.25 for each metric were chosen for site selection.

**Part 4: Calculate the final suitability score.**

The sum of the four weighted metric scores represents the final suitability score that is used to evaluate the results of the desktop selection process.

**Part 5: Refine MS4 drainage area selection layer.**

Smaller drainage areas generate less flow during storm events which makes these outfalls difficult to monitor. Because of this, MS4 outfalls with drainage areas under 10 acres are removed from prioritization.

**c. Field Reconnaissance Protocol**

The top fifteen sites identified as candidates for screening according to the site selection protocol are visited to determine suitability for monitoring and ease of access. Information gained from field reconnaissance is used to select priority sites for wet weather screening. This work may occur in and/or around confined spaces. Staff shall be trained in confined space awareness and identification per OSHA guidelines. For work that involves entry into a confined space, the County (or an approved contractor) will mobilize a (minimum) two-person, permit-required, confined space certified crew with appropriate equipment to the site, and enter the facility adhering to applicable OSHA requirements for confined space entry. Standard operating procedures relevant to safety and health considerations for these monitoring activities are maintained under separate cover in the Fairfax County Stormwater Safety Manual.

Field maps prepared for reconnaissance include streams, watersheds, outfalls, the storm sewer network, and major and minor roads. The candidate sites are photographed. All observations will be recorded on the Wet Weather Monitoring Site Evaluation Form (Appendix E). The field reconnaissance protocol consists of the following steps:

1. Location and Land Use Characterization: Gather data from site selection process (Section II.b) including drainage basin size, land use, and percent impervious drainage area for each candidate site. Have this information on hand during the field reconnaissance.
2. Pollution Potential: In the field, evaluate the subbasin visually for the presence of trash, poor maintenance practices, suspicious spills or stains, and the presence (or absence) and condition of secondary controls (USEPA 2005).
3. Safety: Assess safety concerns at the site including security, proximity to traffic, biological hazards, and confined space entry concerns. Determine if there is a need for personnel trained and certified to work in confined spaces.
4. Infrastructure Configuration: Document information on the infrastructure configuration. Locate outfall(s) and verify orifice diameter to enable calculation of flow rate (discharge) using appropriate Manning's coefficients.
5. Access: Evaluate site accessibility including property ownership, easements, terrain, vegetation, and setup accessibility. If access to the outfall is impeded by dangerous terrain or fences, or it is not visible due to immersion in receiving waters or blocked by sediment, then a manhole up-network from the outfall can be considered as an alternative sampling point. The location of non-outfall monitoring locations should be within County easements. Traffic control authorization and training may be required.
6. Equipment Setup: Open manholes and determine the suitability of placing a compact automated sampler within the manhole or at-grade adjacent to the manhole. Identify any required inserts for monitoring equipment (spring ring, scissors ring, or weir).

The results of the field reconnaissance are reviewed to determine the best sites for monitoring. Factors considered in Steps 2 through 6 of the Field Reconnaissance Protocol could hinder monitoring or eliminate a site from consideration (e.g., inaccessibility, relative lack of security). Two sites will be selected for each five-year MS4 permit term. The County may have to obtain permission from the landowner to access selected monitoring sites. The selected wet weather screening sites will be revisited and prepared for monitoring according to procedures outlined in Section III and Appendix F. Selected monitoring sites and alternate sites are reviewed below.

#### **d. Monitoring Sites**

##### **i. Fairfax Water, Chantilly Location; STMN0442033318**

This outfall drains to the recently restored reach of Flatlick Branch adjacent to Fairfax Water's property yard. The highest ranked site, this outfall drains an area that is greater than 20 acres and about 75% impervious. This outfall drains several parking lots and various commercial facilities. It is also adjacent to a large landscaping materials yard. Some businesses included within the drainage area to this outfall include auto repair and detailing shops, a fleet fueling station, and a restaurant. The land use and drainage area contributing to this outfall increases the potential for actionable follow-up in the event of exceedances.

##### **ii. Bren Marr Park, near I-395; STMN0811453764**

This outfall drains over 76 acres to Backlick Run and is located near both Edsall Road and I-395. This outfall drains numerous industrial and commercial facilities. Some businesses included within the drainage area to this outfall include concrete and construction materials suppliers (Vulcan Materials), auto repair, tiling, electrical work, and construction. A portion of I-395 also drains to this outfall.



## **e. Alternate Monitoring Sites**

### **i. Hill Park Dr, Lorton; STMN0992487877**

This outfall drains to Long Branch adjacent to Fairfax Water's property yard. This outfall drains over 28 acres. It is located adjacent to another highly ranked outfall (STMN0992487937), however this outfall is much better situated for equipment deployment. This outfall drains large institutional and commercial facilities. Some businesses included within the drainage area are auto repair, tiling, landscaping and outdoor materials storage, and food distribution. It also drains residential areas and roadways.

### **ii. Towerview Rd, Herndon; STMN0242014003**

This outfall drains to Horsepen Creek. The upstream drainage network drains parking lots for six commercial buildings, as well as street drainage from Park Center Road, Redskin Drive, and Towerview Road. The outfall receives approximately 15 acres of drainage, made up of over 75% impervious surface coverage. This site ranked within the top ten on the list of prioritized outfalls, and the land use and small drainage area to this outfall would increase the potential for actionable follow-up to exceedances. Some businesses located within the drainage area to this outfall include an equipment rental yard, truck rental and towing, glass product manufacturer, screen printing, and construction materials warehouses.

### **iii. Cinderbed Rd. and Hill Park Dr, Newington; STMN0992487937**

This outfall is within 100 yards of another recommended monitoring site (STMN0992487877) and also drains to Long Branch. It receives drainage from primarily commercial sites but does not receive any residential drainage (unlike the neighboring monitoring site). The drainage area is comprised of 75% impervious surfaces, consisting of a smaller drainage network. The outfall is positioned in an entrenched orientation within the spillway, which would require greater length of suction line for monitoring installations.

### **iv. Terminal Rd, Lorton; STMN0993495633**

This outfall drains a parking area serving a number of ICFs and drains to a ditch alongside a railroad tracks. The drainage area is 15.6 acres (consisting of 85% impervious area), with a singular pipe network contributing to most drainage. The parking areas were mostly full, with employee vehicles as well as customer vehicles awaiting repairs. Additionally, there were many trash receptacles stored near inlets and drains within the parking area. Sediment accumulation within the spillway downstream of the outfall has caused a pool of standing water to form. This could present a challenge during sampling events.

**Field Protocol for Wet Weather Outfall Screening**

This section provides details of the protocols to be followed during wet weather monitoring deployments and includes descriptions of sampling equipment, analytes, sampling frequency, and antecedent condition requirements. Specific instructions for sampling procedures are provided in Appendix F.

**a. Sampling Methods**

The preferred sampling method is an electronic, automated sampler, which collects discrete samples of runoff at specific intervals throughout a storm. The County uses automated samplers and electronic flow logging techniques to sample runoff from potentially high-polluting areas that may adversely impact waters of the State. Stenstrom and Lee (2005) emphasize that monitoring runoff throughout an entire storm with automated sampling is preferable because pollutant concentrations may vary over time based on the rate and duration of rainfall. This approach also allows for unattended monitoring which is useful when storms occur overnight (Harmel et al. 2006). Automated sampling and associated continuous flow-logging also enable researchers to calculate pollutant loads.

Field technicians sample storm runoff flows by attaching automated samplers to MS4 outfalls located within or terminating a target service area. Flow rates are logged at all sampling points to enable flow-weighted compositing of samples. A flow-weighted composite sample provides an accurate representation of the overall concentration of a given analyte in the runoff. The flow-logging apparatus is secured (e.g., with a scissor ring) within the pipe for the duration of each storm event. When flow levels exceed a trigger point, the sampler will initiate the collection of the first flush. This requires the collection of 5 liters of flow. The sampler will then proceed with the total storm collection, collecting at fixed time intervals for the remainder of the forecast storm period. The sample interval can be calculated by multiplying the total sum of expected rainfall accumulation by trailing limb allowance (in hours). This time interval may vary depending on the goals of the sampling or the expected duration of the storm. Seasonality will also factor into the expected rainfall accumulation, and anticipated storm event hydrograph. Individual samples from the total storm collection will be combined into a discharge volume-weighted composite sample. One composite sample and one first flush sample will be obtained at each sampling point and transported to an approved analytical laboratory to be tested for the analytes listed in Table 4. Field technicians measure pH and specific conductance in the first flush and composite samples before delivering samples to the laboratory.

**b. Analytes**

Categories of pollutants to be tested are nutrients, metals, and sediment. Each category consists of specific pollutants that provide information about suspended material transport, contamination of impervious surfaces from heavy metals, and deposition and mobilization of nutrients commonly used in detergents and fertilizers. This analyte suite consists of pollutants shown to be commonly found in urban runoff and has been refined through experience with sampling wet weather runoff from these kinds of areas within Fairfax County. Water hardness (as mg/L CaCO<sub>3</sub>) is monitored so that analytical results can be directly compared to Virginia surface water criteria. Monitoring will be conducted according to procedures approved under 40 CFR Part 136 or alternate methods approved by the U.S. Environmental Protection Agency. Samples must be analyzed at a certified non-commercial (e.g., in accordance with 1VAC30-45) or accredited commercial laboratory (e.g., in accordance with 1VAC30-46).

**Table 4: Laboratory analytes, detection limits, and current analytical methods for Fairfax County’s wet weather screening program.**

<b>Parameter</b>	<b>Detection Limit</b>	<b>Method</b>
Ammonia	0.01 mg/L	EPA 350.1
Cadmium	2.0 µg/L	EPA 200.8
Calcium	2.0 µg/L	EPA 200.8
Chemical Oxygen Demand (COD)	10 mg/L	SM 5220 D
Chloride	0.02 mg/L	EPA 300
Chromium (Total)	2.0 µg/L	EPA 200.8
Copper	2.0 µg/L	EPA 200.8
Fluoride	0.01 mg/L	EPA 300
Iron	2.0 µg/L	EPA 200.8
Lead	2.0 µg/L	EPA 200.8
Magnesium	2.0 µg/L	EPA 200.8
Manganese	2.0 µg/L	EPA 200.8
Nickel	2.0 µg/L	EPA 200.8
Nitrate + Nitrite	0.02 mg/L	EPA 353.2
Orthophosphate	0.01 mg/L	EPA 365.1
pH		SM 4500
Phosphorus (Total)	0.01 mg/L	EPA 365.1
Potassium	0.3 mg/L	EPA 200.8
Silica	2.0 µg/L	EPA 200.8
Sodium	2.0 µg/L	EPA 200.8
Specific Conductance		EPA 120.1
Sulfate	0.02 mg/L	EPA 300
Total Dissolved Solids	10 mg/L	SM 2540 C
Total Kjeldahl Nitrogen	0.5 mg/L	EPA 351.2
Total Suspended Solids	1.0 mg/L	SM 2540 D
Total Water Hardness	1.0 mg/L	SM 2340
Zinc	0.02 mg/L	EPA 200.8

**c. Correcting for baseflow**

The monitoring sites at Bren Mar Park and Fairfax Water, Chantilly may experience continuous or intermittent baseflow. Up to four baseflow samples will be collected at these sites to quantify baseflow rates and the pollutant load contributions during periods of dry weather, with an antecedent dry period of at least 48 hours, or immediately prior to forecasted storm events. This will allow for accurate characterization of pollutant loads above baseline levels during storm events.

#### **d. Sampling Frequency**

The County's 2015 MS4 permit does not specify a sampling frequency or duration for areas of interest. Wet weather sampling of MS4 service areas is intended to support the County in identifying and addressing sources of water quality pollution.

The program is designed for monitoring two areas concurrently four times a year, approximately quarterly, for five years to capture seasonal and interannual variation in pollution concentrations. This sampling frequency results in 8 first flush and 8 composite storm samples per MS4 reporting year, assuming external factors that reduce the availability of predictable, qualifying events (e.g., extended dry periods, scattered thunderstorms) or equipment failure do not prevent sample collection. Any samples missed throughout the year will be re-collected as soon as practically possible. Collections from these storm events may be supplemented with baseflow sampling at the Bren Mar Park and Fairfax Water, Chantilly sites, as mentioned in Section III c.

#### **e. Antecedent Dry Period and Rainfall Criteria**

Sampling after a dry period is beneficial because it reduces the possibility of sampling immediately after surfaces have been washed relatively clean by a prior storm. Antecedent dry periods required by discharge permits typically range from 48 hours for BMP effectiveness studies to 72 hours for standard discharge permit monitoring programs (USEPA 1992). Experience has shown that attempting to wait for a 72-hour antecedent dry period may preclude timely storm sampling, especially during periods of frequent storms (i.e., daily, generally in summer months). A 48-hour antecedent dry period is required for wet-weather monitoring (USEPA 2002) and will be observed in Fairfax County's screening program. The weather conditions at the time of sample collection are recorded as well as the date and approximate time of the most recent storm event preceding the sample collection. This information can be gathered from meteorological databases such as Weather Underground.

Storms that are forecast to deliver 0.3 inches or more of rain within 24 hours are eligible for monitoring. A rainfall depth of 0.3 in. represents a moderate quantity that should produce sufficient runoff to allow automated sampling. The minimum rainfall depth may be revised if it provides insufficient runoff for automated sampling or during extended dry periods.

Eligible storms are identified by field staff that monitor the National Weather Service forecast for storms expected to deliver at least 0.3 in. of rainfall at a targeted service area monitoring location. Rainfall depth delivered by a given storm is estimated from regional rainfall accumulation as determined by Doppler radar or from a local rain gauges in the County.

#### **f. Health and Safety**

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. This work may occur in and/or around confined spaces. Staff shall be trained in confined space awareness and identification per OSHA guidelines. For work that involves entry into a confined space, the County (or an approved contractor) will mobilize a (minimum) two-person, permit-required, confined space certified crew with appropriate equipment to the site, and enter the facility adhering to applicable OSHA requirements for confined space entry. Standard operating

procedures relevant to safety and health considerations for these monitoring activities are maintained under separate cover in the Fairfax County Stormwater Safety Manual.

The following procedures from the Safety Manual are highlighted for field staff:

- Perform field work in teams of at least two.
- Bring mobile phone and first aid kit on all field site visits.
- Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
- Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
- Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

#### IV. **Quality Control**

##### **a. Documentation of Field Monitoring**

Documentation of the wet weather screening effort includes the following:

- results of field reconnaissance in preparation for the wet weather screening
- construction, orientation, and size of the MS4 conduit that is the sampling point for the site of interest
- the unique ID and physical location of the outfall or manhole being accessed (if any)
- GPS coordinates of the outfall or manhole being accessed if it is not on Fairfax County's stormwater infrastructure GIS layer
- description of hardware inserted into the pipe at sampling point

For storm events, a dedicated data sheet (Appendix G) is used to document sample location, rainfall depth, date of sampling initiation, serial numbers of automated sampler and flow module, names of field crew, discrete sample interval, discharge volume represented by each discrete sample, proportional aliquot of discrete sample used in compositing, and date and time of sample composite.

##### **b. Chain of Custody**

Chain of custody (COC) forms, used for all samples, are a permanent record of transfer of sample custody. Custom COC forms for this project are preprinted with the analytes and partial laboratory numbers particular to the activity at hand (e.g., composite; Appendix H). Field staff need only to complete the laboratory numbers, complete the columns designated for other information, line out any samples that will not be submitted, and sign the form. When picking up the samples for delivery to the laboratory, the laboratory courier signs and dates the COC form in the "Received By" box and leaves a photocopy for project records. Copies of the COC form are provided with certificates of analysis from the laboratory.

### **c. ISCO Model 6712 Portable Automated Sampler**

The sampler assembly consists of a keypad, pump, tubing, and sample bottle container which holds 24 plastic bottles. The first five bottles in the series will be used for a first flush analysis, and the remaining 19 are used to contain the discrete samples collected at intervals throughout the storm. Required maintenance involves checking the integrity of the suction tubing, checking to see that suction tubing is securely attached to the pump tubing (when sampler is attached), making sure that pump tubing is properly threaded through the distributor arm, running the internal electronic maintenance cycle (includes electronic tests of RAM and ROM, mechanical tests of sample pump and distributor arm), and making sure the knurled knob that holds the distributor arm to the frame is tight. Quarterly maintenance consists of running the sample pump to check for suction line integrity. The suction line at a sampling point is replaced when the apparatus is moved to a new site upon completion of sampling. The pump tubing is replaced annually. A step is included in the automated sampler program to rinse the suction tubing with sample water prior to sampling.

## **V. Notification/Follow-Up Procedures**

Standard laboratory analysis reporting time is two weeks; the field staff forward all monitoring results by email to the Wet Weather program manager within three business days of results receipt with a notification of results that exceed the criteria in Table 5. The Wet Weather program manager reviews the results and coordinates with the Stormwater Pollution Inspections Section to determine appropriate follow-up actions in accordance with the “Standard Operating Procedures for Industrial High Risk Runoff Program MS4 Point of Connection and Facility Inspections”. The Stormwater Pollution Inspections section ensures that any discharges or findings of non-compliance that meet the conditions specified in Part II.G, H or I of the MS4 permit are reported to DEQ and notifies any other county agencies, as necessary. The County’s water quality Stormwater “Who to Call List” outlines the appropriate individuals and agencies to be notified for various water quality incidents and concerns and is utilized in this process.

Note: If a hazardous material spill is suspected, field staff will immediately call the county’s Fire and Rescue Hazardous Material Investigative Service (703-246-2300) and the appropriate staff (referenced above) in the County Stormwater Planning Division.



**Table 5: Laboratory analytes and detection limits for Fairfax County’s wet weather screening and industrial/high risk runoff programs**

Parameter	Detection Limit	Exceedance Criterion
Ammonia <sup>(a)</sup>	0.01 mg/L	10 mg/L
Cadmium <sup>(b) (c)</sup>	2.0 µg/L	2.1 µg/L
Calcium	2.0 µg/L	N.A.
Chemical Oxygen Demand (COD) <sup>(b)</sup>	10 mg/L	120 mg/L
Chloride <sup>(d)</sup>	0.02 mg/L	860 mg/L
Chromium (Total) <sup>(b)</sup>	2.0 µg/L	1.1 mg/L
Copper <sup>(b) (c)</sup>	2.0 µg/L	18 µg/L
Fluoride <sup>(a)</sup>	0.01 mg/L	75 mg/L
Iron <sup>(b)</sup>	2.0 µg/L	1.0 mg/L
Lead <sup>(b) (c)</sup>	2.0 µg/L	120 µg/L
Magnesium <sup>(b)</sup>	2.0 µg/L	64 µg/L
Manganese <sup>(e)</sup>	2.0 µg/L	50 µg/L
Nickel <sup>(b) (c)</sup>	2.0 µg/L	470 µg/L
Nitrate + Nitrite <sup>(f)</sup>	0.02 mg/L	1.85 mg/L
Orthophosphate	0.01 mg/L	N.A.
pH <sup>(d)</sup>		< 6.0, > 9.0
Phosphorus (Total)	0.01 mg/L	2 mg/L
Potassium <sup>(g)</sup>	0.3 mg/L	20 mg/L
Silica	2.0 µg/L	N.A.
Sodium	2.0 µg/L	N.A.
Specific Conductance <sup>(g)</sup>		2,000 µS/cm
Sulfate	0.02 mg/L	N.A.
Total Dissolved Solids <sup>(d)</sup>	10 mg/L	500 mg/L
Total Kjeldahl Nitrogen <sup>(b)</sup>	0.5 mg/L	1.5 mg/L
Total Suspended Solids <sup>(b)</sup>	1.0 mg/L	100 mg/L
Total Water Hardness <sup>(g)</sup>	1.0 mg/L	< 10 mg/L, > 2,000 mg/L
Zinc <sup>(a) (c)</sup>	0.02 mg/L	0.2 mg/L

- (a) Virginia Pollutant Discharge Elimination System (VPDES) industrial general permit numeric effluent limit  
(b) Virginia Pollutant Discharge Elimination System (VPDES) industrial general permit benchmark concentration  
(c) Acute water quality criterion for metals is hardness-dependent. Values above reflect hardness standardized to 100 mg/L as CaCO<sub>3</sub>. See Virginia Water Quality Standard 9VAC25-260-140 for explanation of factors used to adjust acute criterion based on hardness for specific metals.  
(d) Virginia Water Quality Standards for surface water 9VAC25-260-140.  
(e) EPA secondary drinking water standards  
(f) Municipal Action Levels from waste discharge requirements for Los Angeles County MS4 (Order No. R4-2012-0175, as amended by Order WQ 2015-0075)  
(g) Benchmark concentration from Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments  
N.A. = No EPA or Virginia acute standard available

## VI. **Monitoring Reports**

For the Wet Weather Screening Program, Fairfax County produces individual storm reports and permit yearly reports (for all activities within an annual MS4 reporting cycle) to document permit compliance data collection efforts.

### **a. Event Monitoring Report**

For each storm event monitored, an event monitoring report is created for all sites monitored during that event. A data table is prepared that includes the following information:

- Site evaluation and reconnaissance data;
- Site setup and antecedent rainfall information;
- Storm setup and sample collection information;
- Sample analysis results;
- Continuous flow rate and rainfall data (in 10-minute intervals);
- Discrete volume worksheet;
- Pass/fail screening status; and
- Reference values for exceedance criteria.

The event monitoring report also includes a PDF of the laboratory certificate of analysis. The laboratory provides analytical results within two weeks.

### **b. Monitoring Yearly Report**

At the end of each MS4 reporting year (July 1 – June 30), a report on wet weather screening of potential pollution runoff areas is prepared for use in the development of the County's annual MS4 report to VA DEQ. The report contains narratives of each area screened and briefly describes results. The yearly report includes the following:

- locations where wet weather screening was conducted;
- weather conditions at the time each sample was collected including the date and approximate time of the most recent storm event preceding sample collection,
- compilation of analytical results, flow, and rainfall data for each site;
- narratives of each site screened and brief descriptions of results;
- statement addressing permit requirement regarding long term trend analysis of the results;
- follow-up actions performed as a result of the wet weather screening; and
- summary spreadsheet containing analytical results (identifying any exceedances), flow, and rainfall data (see example spreadsheet format in Appendix J)

Year 2 through Year 5 reports include comparisons to prior years monitoring efforts and results. The Year 5 report will also include an overall summary of the five years of monitoring and recommendations for future wet weather screening efforts.

## VII. **References**

- Harmel, R., K. King, B. Haggard, D. Wren, and J. Sheridan. 2006. Practical Guidance For Discharge And Water Quality Data Collection On Small Watersheds. Transactions of the American Society of Agricultural and Biological Engineers, Vol. 49, p. 4.
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- Virginia State Water Control Board. 2009. General VPDES Permit for Industrial Activity Storm Water Discharges, Permit No. VAR05 Fact Sheet. Virginia Department of Environmental Quality, Richmond, VA. April.
- Virginia State Water Control Board. 2011. 9VAC25-260 Virginia Water Quality Standards, With Amendments Effective January 6, 2011. Virginia Department of Environmental Quality, Richmond, VA. January.

## VIII. **Administrator of the SOP**

This SOP document is administered by the Stream Monitoring Section within the Stormwater Planning Division. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

- IX. **Appendices**
- A. Land Use Codes and Index Values for Wet Weather Pollutant Discharge Potential**
  - B. Selected SIC Codes that Occur Within Fairfax County MS4 Service Areas**
  - C. Graphical representation of site selection process**
  - D. Maps and Photos of Selected and Alternative MS4 Service Areas**
  - E. Wet Weather Monitoring Site Evaluation Form**
  - F. Equipment Installation, Operation and Sampling Procedures**
  - G. Example Wet Weather Screening Field Data Sheet**
  - H. Chain of Custody Form**

## Appendix A: Land Use Codes and Index Values for Wet Weather Pollutant Discharge Potential

Land uses and attached index of potential wet weather pollution discharge (1=least, 4=most risk for contributing excess pollutants via wet weather discharge) for parcels in Fairfax County, Virginia. Note that codes were established only for three-digit land use codes. Land use codes were obtained from Fairfax County Department of Tax Administration.

Land Use Code	Description	Index
0	Residential	
3	Retail Trade	1
1	Single-family, Detached or Semidetached	
11	Single-family, detached	1
12	Single-family, semidetached or garden court	1
13	Two or more single-family, detached on single parcel (including guest house or unit in detached auxiliary building)	1
14	Single-family structure NEC	1
15	Single-family residences located in an area where value may be influenced by commercial or industrial properties.	1
2	Two-family	
21	Duplex, either vertical or horizontal	1
29	Two-family NEC	1
3	Townhouse or Multiplex	
31	Townhouse, in ownership development	1
32	Townhouse, in condominium development	1
33	Townhouse, in rental development	1
34	Multiplex (except duplex) in ownership development	1
35	Multiplex (except duplex) in condominium development	1
36	Multiplex (except duplex) in rental development	1
37	Combination of structure types, predominantly townhouses and/or multiplexes	1
39	Townhouse or multiplex structures NEC, including cooperatives	1
4	Apartments	
40	Garden apartments, rental (up to and including 4 stories)	1
41	Garden apartments, condominium (up to and including 4 stories)	1
42	Medium rise apartments, rental (5 to 8 stories)	1
43	Medium rise apartments, condominium (5 to 8 stories)	1
44	High rise apartments, rental, without commercial/professional (9 or more stories)	1
45	High rise apartments, condominium, without commercial/ professional (9 or more stories)	1
46	High rise apartments, rental, with commercial/professional (9 or more stories)	1

<b>Land Use Code</b>	<b>Description</b>	<b>Index</b>
47	High rise apartments, condominium, without commercial/ professional (9 or more stories)	1
48	Combination of structure types, predominantly apartments	1
49	Apartments, NEC, including cooperatives	1
5	Mobile Homes	
51	Mobile homes in park or court	1
52	Mobile homes not in park or court	1
6	Residential Structures (originally designed for hotels and motels but now primarily used as dwelling units)	
60	Residential hotels and motels	1
7	Group Quarters	
71	Rooming and boarding houses	1
72	Membership lodgings	1
73	Residence halls and dormitories	1
74	Retirement homes and orphanages	1
75	Religious quarters	1
76	Nursing homes	1
79	Other group quarters NEC (except military and correctional)	1
8	Transient Lodging	
81	Motel without restaurant and/or other commercial amenities	1
82	Motel with restaurant and/or other commercial amenities	1
83	Hotel without restaurant and/or other commercial amenities	1
84	Hotel with restaurant and/or other commercial amenities	1
85	Tourist Home	1
89	Other transient lodging NEC	1
9	Other Residential	
91	Garage, barn, outhouse, shed, etc., on separate but adjacent parcel from unit	4
92	Private open space, swimming pool, tennis courts, private roads, parking areas,	2
93	Private open space, swimming pool, tennis courts, private roads, parking areas,	2
99	Other residential NEC	1
1	Industrial	
11	Industrial Park or Conglomeration	
111	Planned industrial park	4
112	Industrial conglomeration	4
12	Durable Manufacturing, where not in industrial parks	
121	Durable manufacturing	4
126	Durable manufacturing (where in a condominium development)	4
127	Durable manufacturing (where in a cluster development)	4
13	Nondurable Manufacturing, where not in industrial parks	

<b>Land Use Code</b>	<b>Description</b>	<b>Index</b>
131	Nondurable manufacturing	4
135	Printing and publishing	4
136	Nondurable manufacturing (where in a condominium development)	4
137	Nondurable manufacturing (where in a cluster development)	4
14	Research and Testing, where not in industrial parks	
140	Research and test, where not in office building or office park	4
146	Research and testing (where in a condominium development)	4
147	Research and testing (where in a cluster development)	4
15	Wholesale, Warehousing and Storage, where not in industrial parks	
150	Wholesale, warehousing and storage	3
151	Mini-warehouses	3
156	Wholesale, warehousing and storage (where in a condominium development)	3
157	Wholesale, warehousing and storage (where in a cluster development)	3
16	Contract Construction, where not in industrial parks	
160	Contract construction	4
166	Contract construction (where in a condominium development)	4
167	Contract construction (where in a cluster development)	4
19	Other Industrial NEC	
190	Other industrial NEC	4
2	Transportation, Utilities, Communications (operating facilities not including offices)	
21	Transportation	
211	Railroad, including right-of-way, terminals, maintenance	3
212	Rail rapid transit, including right-of-way, terminals, maintenance	3
213	Bus, including terminals, maintenance and special rights-of-way	3
214	Motor freight transportation	3
215	Street and highway right-of-way	3
216	Auto parking	3
217	Air including runways, terminals and maintenance	3
218	Marine terminals	3
219	Other transportation NEC (including freight forwarding services and taxi	3
22	Utilities	
221	Electric, including transmission rights-of-way, generation plants, regulating	4
222	Gas, including pipeline rights-of-way, production plants, storage and distribution	4
223	Water, including pipeline rights-of-way, treatment plants, storage, irrigation	4
224	Sewage, including treatment plants, pressure control stations, etc.	4
225	Solid waste disposal including refuse incineration, garbage grinding stations,	4
226	Pipeline rights-of-way and pressure control stations, NEC (such as petroleum)	4
229	Other utilities, NEC	3



<b>Land Use Code</b>	<b>Description</b>	<b>Index</b>
23	Communications	
231	Telephone and telegraph	3
232	Radio and television	3
239	Other communications, NEC 3 Retail Trade	3
31	Shopping Centers (a group of commercial establishments with on-site parking which are planned, developed, owned and managed as a unit, and related in	
311	Neighborhood Center	2
312	Specialty Center - consists of numerous small tenants with no anchor tenant.	2
313	Community Center	2
314	Regional Center	2
315	Super Regional Center	2
316	Promotional Center	2
317	Town Center	2
318	Condo Center	2
32	Building Materials, Hardware, Farm Equipment (where not included in shopping centers)	
320	Building materials, hardware, farm equipment	3
33	General Merchandise, Apparel, Home Furnishings, Drugs (where not included in shopping centers)	
331	Department stores	2
332	Discount stores	2
333	Variety or junior department stores	2
334	Apparel and accessories	2
335	Furniture, house furnishings	2
336	Drug stores	2
337	Condo Retail - Specialty type store located in a predominantly office or	2
34	Food Stores (where not included in shopping centers)	
341	Supermarket	2
342	Supermarket plus general merchandise	2
343	Convenience grocery	2
349	Other food NEC (including fruit, meat, fish, etc.)	2
35	Eating and Drinking (where not included in shopping centers)	
351	Restaurant with alcohol	3
352	Restaurant without alcohol	3
353	Carry-out Kitchen	3
354	Carry-out with seating	3
36	Automotive, Marine, Aircraft and Accessories (where not included in shopping centers)	
361	Motor vehicle sales (new and used)	2

<b>Land Use Code</b>	<b>Description</b>	<b>Index</b>
362	Gasoline and Service Station	3
363	Gasoline Sale Only	3
364	Gasoline Sales and Car Wash	3
365	Service Station out of operation, but not yet converted to another use. Service	2
369	Other automotive, marine, aircraft and accessories NEC	3
39	Other Retail NEC (where not included in shopping centers)	
390	Other retail NEC	2
4	Office Buildings and Office Parks	
41	Office Park	
410	Office Park	1
42	Low Rise Office (up to and including 4 stories)	
421	General low rise office	1
422	Medical and/or dental low rise office	1
423	Government leased low rise office (90% or more floor area leased to	1
424	Government owned low rise office	1
425	Condominium Office (General, Low Rise)	1
426	Condominium Office (Medical and/or Dental, Low Rise)	1
427	Cluster Office (General, Low Rise)	1
428	Cluster Office (Medical and/or Dental, Low Rise)	1
429	Converted Residential Office (ex-dwellings which have been totally converted	1
43	Medium and High Rise Offices (5 or more stories)	
431	General medium or high rise office	1
432	Medical and/or dental medium high rise office	1
433	Government leased medium or high rise office (90% or more floor area leased to	1
434	Government owned medium or high rise office	1
435	Condominium Office (General, Medium or High Rise)	1
436	Condominium Office (Medical and/or Dental, Medium or High Rise)	1
49	Other Office NEC	
490	Other office NEC	1
5	Consumer and Business Service land uses (where not included in office buildings or shopping centers; usually in converted houses or converted stores)	
510	Finance, insurance, real estate and professional services	1
520	Personal services including laundry, photo, beauty, barber, funeral, apparel,	1
530	Motor vehicle repair when provided separately from motor vehicle sales dealers and gasoline stations.	3
540	Other repair services NEC	1
550	Veterinary hospitals	1
590	Other consumer and business service land uses NEC	1

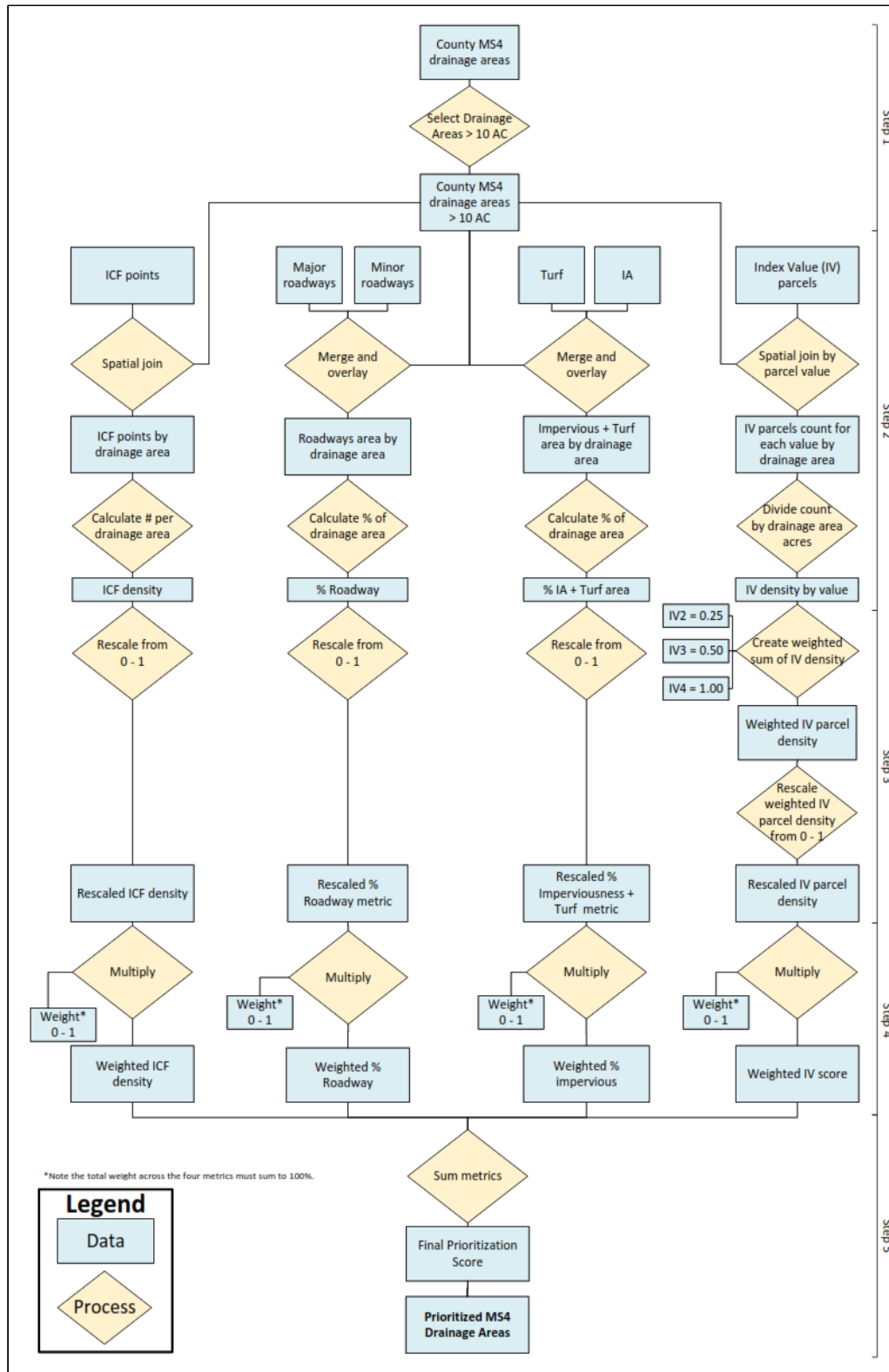
<b>Land Use Code</b>	<b>Description</b>	<b>Index</b>
6	Public and Quasi Public Service land uses (where not included in office buildings or shopping centers)	
610	Cemeteries	1
620	Hospital and health facilities (except nursing homes)	1
630	Post offices	1
640	Police stations	1
650	Fire and rescue stations	1
660	Correctional institutions	1
670	Military institutions	1
680	Welfare and charitable services	1
690	Other public and quasi public service land uses NEC	1
7	Cultural, Educational and Entertainment Service	
71	Churches, Synagogues	
710	Churches, synagogues	1
72	Civic, Social, Fraternal, Professional, Business Associations	
720	Civic, social, fraternal, professional, business associations	1
73	Libraries	
730	Libraries	1
74	Permanent Exhibition	
740	Permanent exhibitions including museums, art galleries, monuments, planetaria,	1
75	Education	
751	Nursery schools (may include kindergarten)	1
752	Public elementary, intermediate, secondary, high and special class schools	1
753	Private schools; kindergarten through 12 or combination of these grades; may	1
754	College, universities, including junior colleges and professional schools (law,	
755	Special training schools including vocational and trade schools, business,	1
759	Other educational services NEC	1
76	Public Assembly, Both Indoor and Outdoor	
760	Places of public assembly including theaters, stadiums, auditoriums, exhibition	1
79	Other Cultural and Entertainment Service land uses NEC	
790	Other cultural and entertainment service land uses NEC	1
8	Recreation	
81	Recreation Facilities and Parks - Outdoor (except golf courses and except swimming pools not in public parks)	
811	Private (except for homeowner association facilities)	1
812	Commercial - open to public	1
813	Government-owned - open to public with or without fee	1
82	Recreation Facilities - Indoor (except swimming pool)	
821	Private	1

<b>Land Use Code</b>	<b>Description</b>	<b>Index</b>
822	Commercial - open to public	1
823	Government-owned - open to public with or without fee	1
83	Golf Courses	
831	Private	3
832	Commercial	3
833	Government-owned	3
84	Swimming Pools (except homeowners association pools).	
841	Swimming pools - outdoor	3
842	Swimming pools - indoor	3
85	Boat Slips	
850	Boating Marinas - public and private	2
851	Condominium Boat Slips - private for sale	2
9	Resource Uses and Undeveloped Areas	
91	Agricultural Activities	
910	Agricultural activities and related services	3
92	Forestry Activities and Related Services	
920	Forestry activities and related services	3
93	Horticulture Activities	
930	Horticulture activities and related services	3
94	Resource Production and Extraction	
941	Sand and gravel quarrying	3
949	Other resource production and extraction	3
95	Permanent Conservation Areas	
950	Permanent conservation areas, including wildlife preserves	1
96	Water Areas	
960	Water areas	1
97	Vacant Land	
971	Vacant land	1
972	Improved land with dilapidated structure of no visible use, incidental shed, etc.	1
99	Other Resource Uses and Undeveloped Area NEC	
990	Other resource uses and undeveloped area NEC	1

**Appendix B: Selected SIC Codes that within Fairfax County MS4 Service Areas**

SIC	Description
241	Dairy Farms
751	Livestock Grooming
752	Dog Training/Pet Boarding Sitting & Kennels/Pet Services/Pet Funeral Servies/Pet Training/Pet Washing & Grooming
1311	Oil & Gas Producers
1611	Paving Contractors
2752	Printers (Mfrs)
2841	Soaps, Detergents, and Cleaning Preparations
2851	Paint Removers-Manufacturers
2911	Oil Refiners (Mfrs)/Petroleum Products-Manufacturers
2951	Asphalt Paving Mixtures and Blocks
4119	Limousine Service
4212	Hauling Debris Removal
4953	Garbage Collections/Junk Removal/Landfills- Sanitary/Pet Waste Removal/Refuse Systems/Waste Disposal-Hazardous/Medical
5015	Automobile Wrecking (Whls)
5084	Printer Cartridges (Whls)
5093	Recycling Centers (Whls)/Scrap Metals & Iron (Whls)
5169	Chemicals (Whls)/Chemicals-Storage & Handling (Whls)/Cleaning Compounds/Lubricants-Synthetic (Whls)/ Sealers-Asphalt, Concrete, Etc (Whls)
5171	Petroleum Bulk stations and Terminals
5172	Oils-Lubricating-Wholesale/Oils-Petroleum (Whls)
5191	Animal Health Products (Whls)/ Feed-Dealers (Whls)/Fertilizers (Whls)
5211	Building Materials
5261	Garden Centers/Mulches/Nurserymen
5511	Automobile Dealers-New Cars/Used Cars/ Limousine-Dealers
5541	Oils-Lubricating-Retail/Service Stations-Gasoline & Oil
5571	Mopeds/Motorcycles & Motor Scooters-Accessories/Dealers/Supplies
5999	Pet Supplies & Foods-Retail
6512	Shopping Centers & Malls
7342	Deodorizing & Disinfecting/Pest Control
7349	Janitor Service
7359	Carpet Rug & Cleaning Equipment-Rental/Contractors-Equipments Supls-Renting
7514	Automobile Renting
7532	Automobile Body-Repairing & Painting/Automobile Customizing
7533	Mufflers & Exhaust Systems-Engine
7536	Glass Coating and Tinting
7537	Transmissions-Automobile
7538	Automobile Repairing & Servicing/Automobile Machine Shop Service/Truck Repairing & Service
7539	Automobile Radiator Repair/Automotive Repair Shops/Brake Service/Carburetors
7542	Automobile Detail & Clean-Up Service/Car Washing & Polishing
7549	Automobile Lubrication Service/Automobile Inspection Stations New/Used/Wrecker Service
7623	Refrigerating Equip-Commercial-Service/Refrigerators & Freezers-Service/Repair
7933	Bowling Centers
7992	Golf Courses
7997	Swimming Pools-Private
7999	Golf Courses-Miniature/Golf Instruction/Golf Practice Ranges/7999 – Swimming Pools-Public

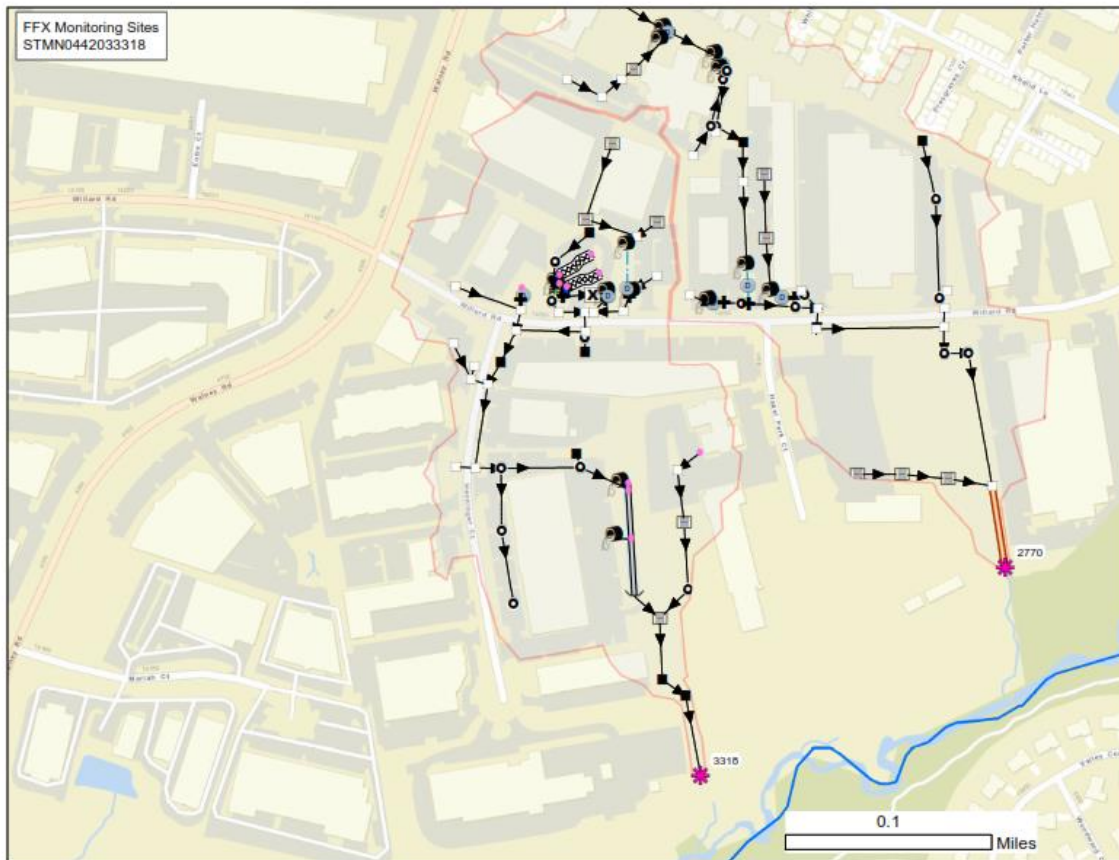
## APPENDIX C: Graphical representation of site selection process



# APPENDIX D: Maps and Photos of Selected and Alternative MS4 Service Areas

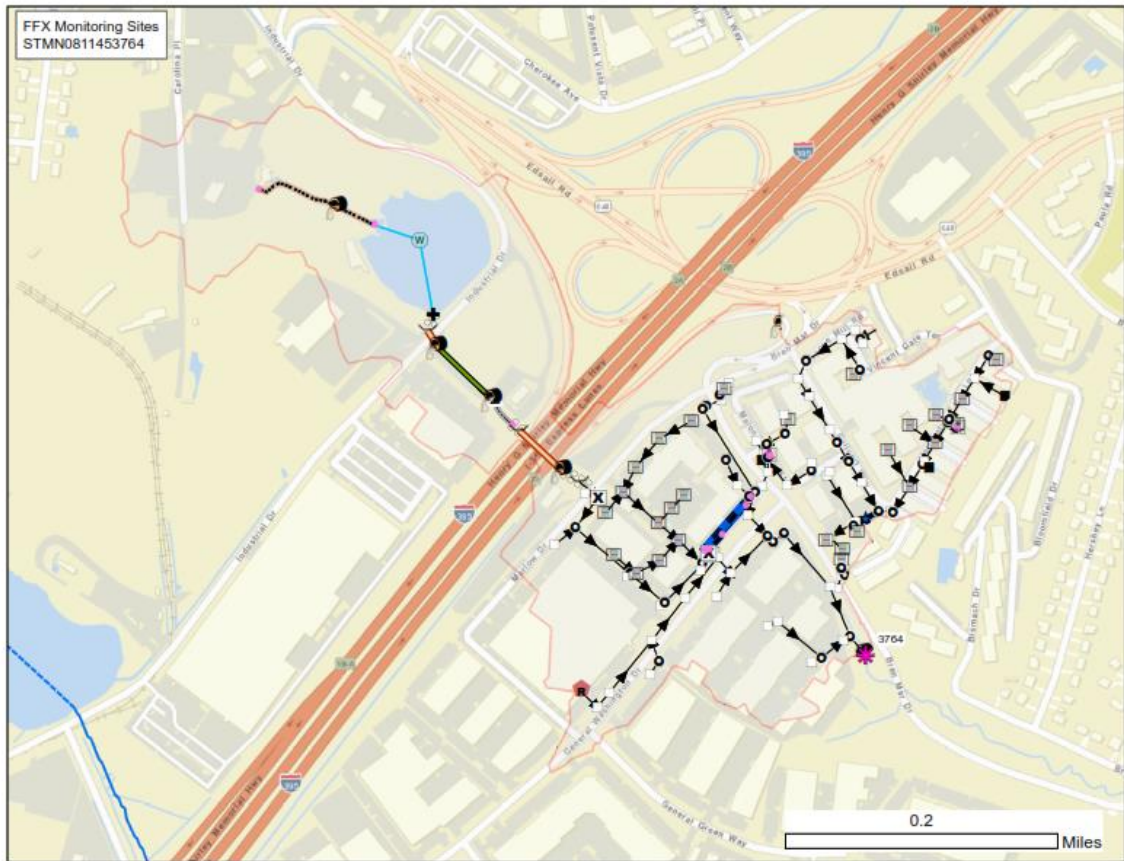
## Selected Monitoring Sites

### 1. Fairfax Water, Chantilly Location; STMN0442033318



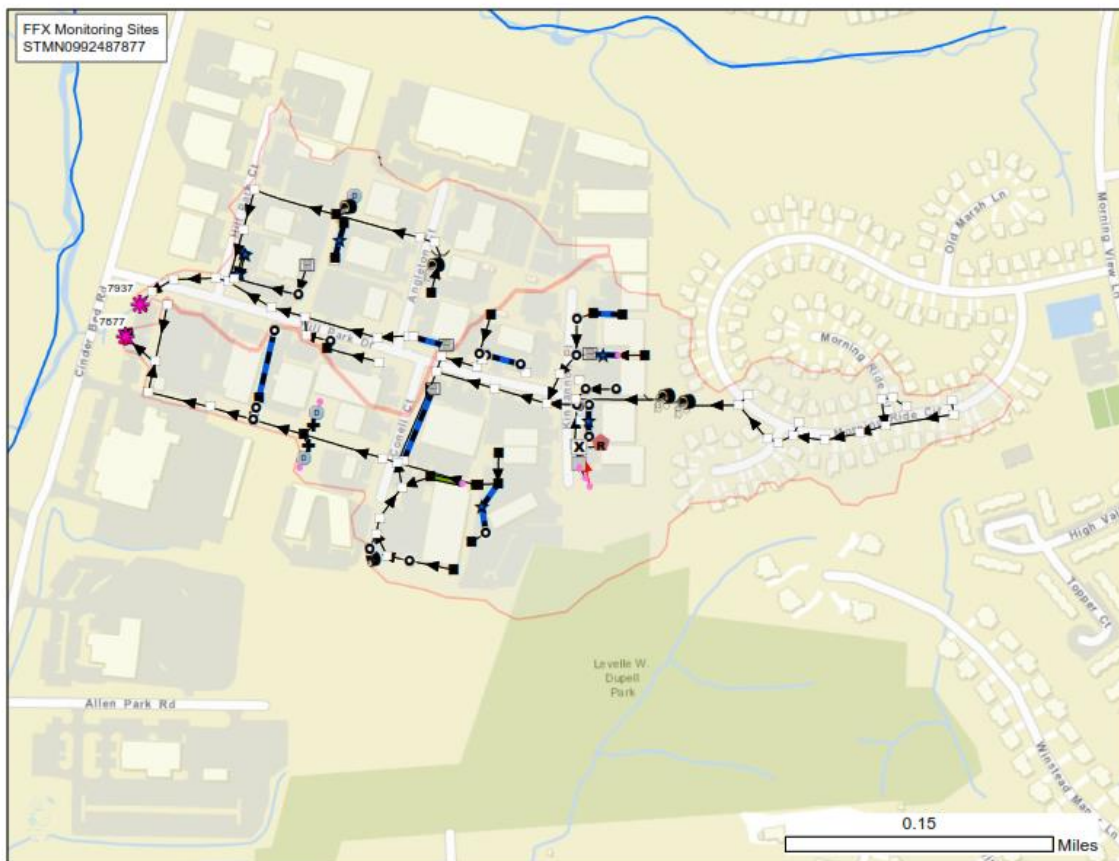


## 2. Bren Marr Park, near I-395; STMN0811453764



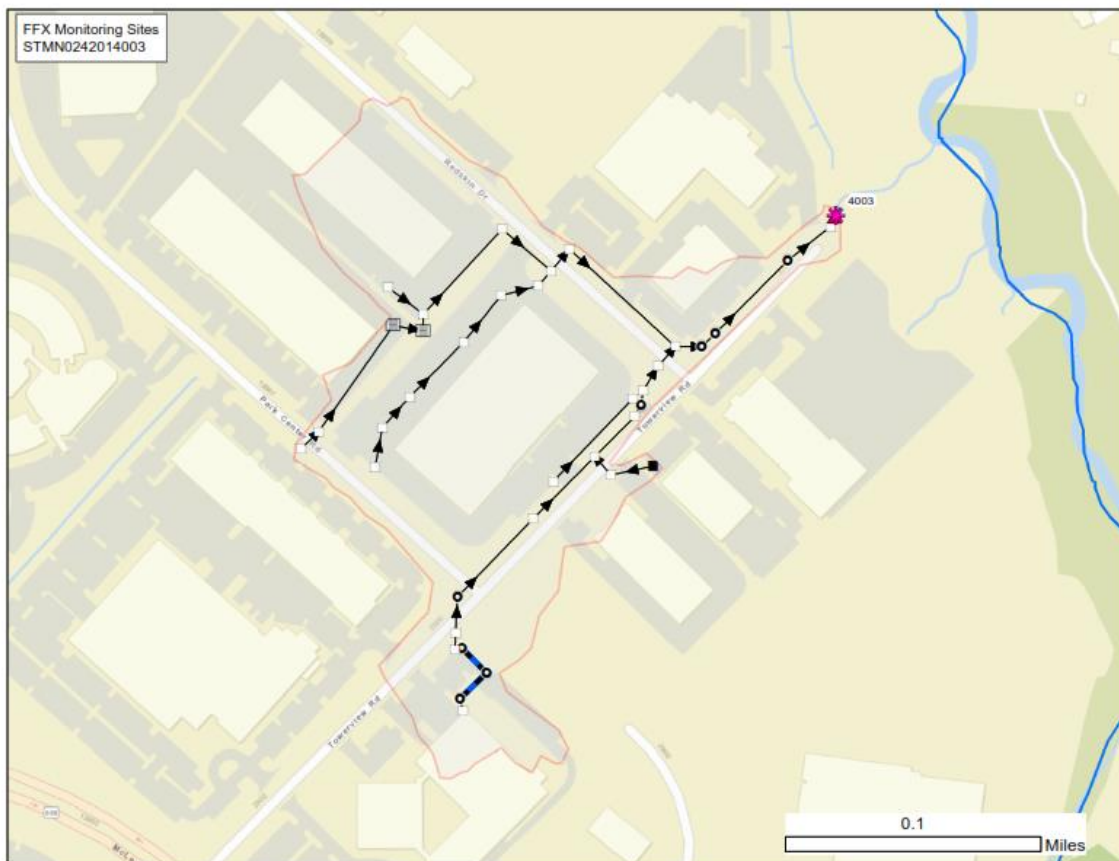
**Alternate Monitoring Sites**

**1. Hill Park Dr, Lorton; STMN0992487877**

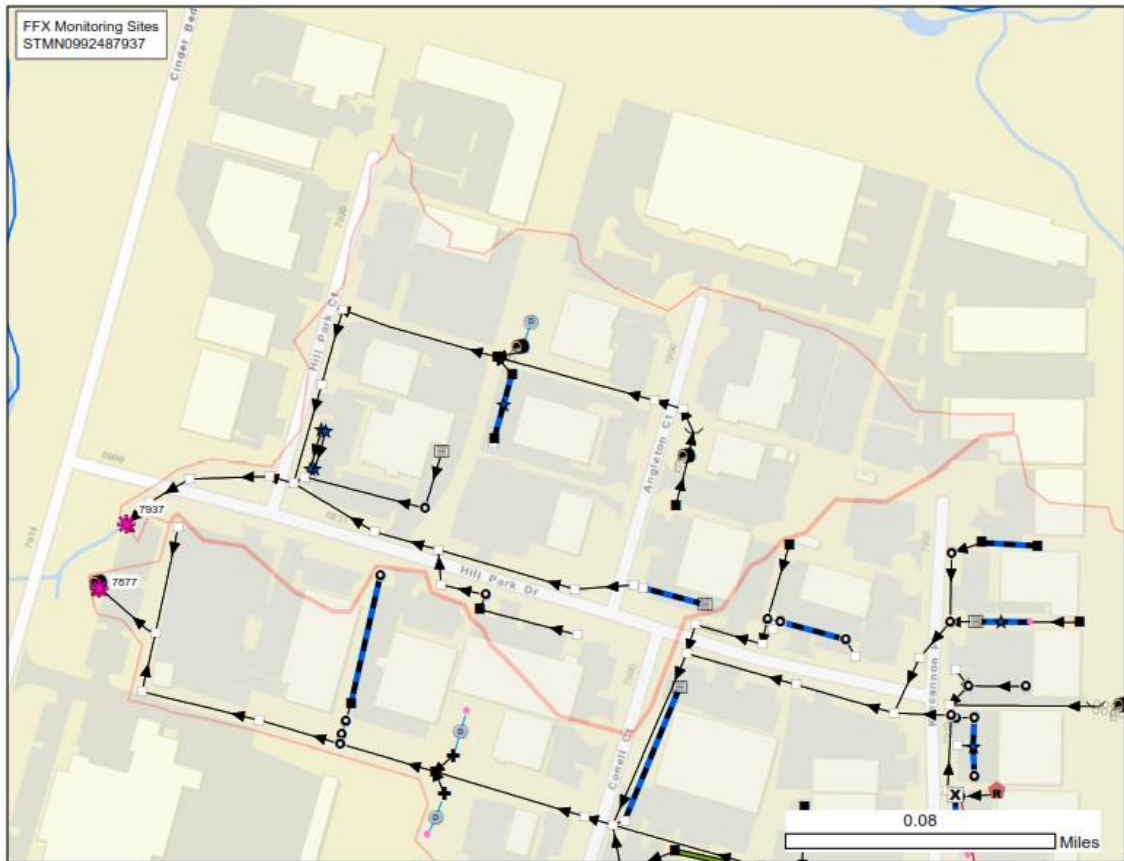




## 2. Towerview Rd, Herndon; STMN0242014003

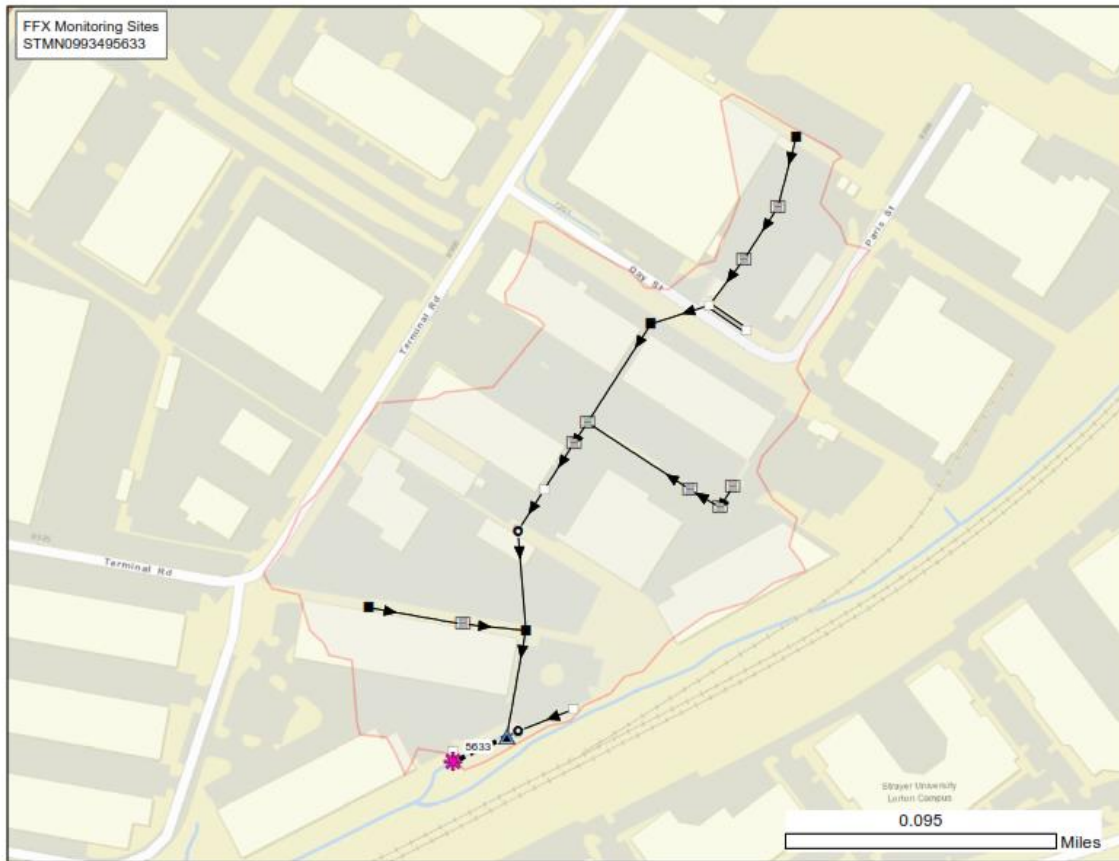


### 3. Cinderbed Rd. and Hill Park Dr, Newington; STMN0992487937





#### 4. Terminal Rd, Lorton; STMN0993495633



**Appendix E: Wet Weather Monitoring Site Evaluation Form**

WET WEATHER MONITORING SITE EVALUATION	
FIELD DATA COLLECTION FORM	
Date/Time:	Lat/Long:
Evaluator Initials:	Adjacent Cross Streets:
Outfall ID: STMN _____	Predominant Land Use:
LAND USE CHARACTERIZATION	
Percent breakdown of: Residential _____ Commercial _____ Industrial _____ Institutional _____	
Businesses/Organizations Nearby:	
POLLUTION POTENTIAL	
<p>Check any that apply:</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><input type="checkbox"/> Outdoor material storage (uncovered, hazardous, leaking)</p> <p><input type="checkbox"/> Waste management (open/leaking dumpster, blowing trash)</p> </div> <div style="width: 45%;"> <p><input type="checkbox"/> Parking lot stains</p> <p><input type="checkbox"/> Uncovered outdoor vehicle or equipment maintenance</p> <p><input type="checkbox"/> Outdoor vehicle fueling</p> <p><input type="checkbox"/> Outdoor industrial processes</p> <p><input type="checkbox"/> Other</p> </div> </div>	
Description of items selected from above list:	
Description of stormwater controls on site (none, few, pervasive):	
Other:	
SAFETY	
Site Security (personnel and/or equipment):	

## WET WEATHER MONITORING SITE EVALUATION

<b>Proximity to Traffic (traffic control needed?):</b>	
<b>Biological Hazards:</b>	
<b>Confined Space Entry Concerns:</b>	
<b>Other:</b>	

### INFRASTRUCTURE CONFIGURATION

<b>Check any that apply:</b>	
<input type="checkbox"/> Concrete Ditch	<input type="checkbox"/> Pond/Scour Pool Present?
<input type="checkbox"/> Pipe Conduit	<input type="checkbox"/> Pipe Shape
<input type="checkbox"/> Natural Channel	<input type="checkbox"/> Irregular Outfall Shape
<input type="checkbox"/> Submerged?	
<input type="checkbox"/> Other	
<b>Describe configuration and accessibility of feeder outfalls to natural channel or concrete ditch, if applicable:</b>	
<b>Pipe Diameter/Dimensions (in):</b>	
<b>Pipe Slope (%):</b>	
<b>Pipe Conditions (sediment, organic material):</b>	
<b>Receiving Waterbody:</b>	

### ACCESS

<b>Site located on private property?</b>	
<b>Slope/Terrain/Overgrown Veg:</b>	
<b>Fencing/Security (gate key/combo needed?):</b>	
<b>Travel Time:</b>	
<b>Suitable parking/egress?</b>	<b>Distance from site to truck parking (approx.):</b>



## WET WEATHER MONITORING SITE EVALUATION

<b>Other:</b>			
<b>Sketch property layout:</b>			
<b>EQUIPMENT SETUP</b>			
<b>Access via Outfall or Manhole (if manhole, can tubing be routed with manhole cover in place?):</b>			
<b>Backwater Concerns:</b>		<b>Proximity to bends/confluences in pipe:</b>	
<b>Sedimentation concerns:</b>		<b>Other concerns from flow:</b>	
<b>Age of Infrastructure/Proximity to new development:</b>			
<b>Public Exposure/Visibility:</b>			
<b>Describe the proposed site layout:</b>			
<b>Other:</b>			
<b>Sketch equipment setup:</b>			

## Appendix F: Equipment Installation, Operation and Sampling Procedures

### Wet weather screening equipment

The automated sampler to be employed will be an ISCO Model 6712 portable sampler capable of collecting up to 24 1000-mL water samples. The samples are contained in Propak liners constructed of polyethylene which are inserted into plastic frames to provide rigidity. The size of the samples and number of bottles will assure that several bottles will be filled corresponding to all portions of the storm event hydrograph. The automated sampler will be transported to the sampling sites prior to the storm event and removed after event conclusion. During the event, each sampler will be covered by a lid to protect it from the effects of weather. The samplers will be powered by 12 volt 100Ah rechargeable marine batteries. The sampler will be secured against theft when practical using bicycle locks attached to fixed objects such as fence posts.

Should site conditions require, an ISCO Model 6712C compact portable sampler may be used. This sampler is of a size and configuration that will allow it to be inserted and retrieved from a manhole and suspended using a pro-hanger and appropriate harness (for manholes 18 to 24 inches in diameter). Alternatively, the samplers may be secured using rebar loops inserted into the ground and combination bicycle locks to discourage theft.



Automated sampler placed in manhole using hanger and spring ring

AV Module The flow module measures water level within the pipe based on overlying water pressure exerted on bubbles pumped from the module that exit the bubbler tubing at the base of the pipe. Flow rates are calculated from the water level measurements based on Manning's Equation. The bubbler line is mounted to a "spring ring" or "scissors ring" that is secured within the pipe. If backwater conditions

exist at an outfall or within the MS4, an ISCO Model 750 area-velocity flow module and appropriate probe may be substituted in order to accurately determine flow rate.

### **On-site equipment installation**

#### Materials, Equipment and Supplies:

- Confined Spaces entry apparatus (if necessary) consisting of tripod, winch, lanyard, harness, oxygen meter.
- Scissors ring or spring ring with appropriate extensions, where applicable
- Remote installation tool
- Bubbler line or area-velocity probe
- Suction line and stainless steel low-flow strainer
- Ratchet set, English
- Sensor carrier
- Cable ties
- Batteries and container

This work may occur in and/or around confined spaces. Staff shall be trained in confined space awareness and identification per OSHA guidelines. For work that involves entry into a confined space, the County (or an approved contractor) will mobilize a (minimum) two-person, permit-required, confined space certified crew with appropriate equipment to the site, and enter the facility adhering to applicable OSHA requirements for confined space entry. Standard operating procedures relevant to safety and health considerations for these monitoring activities are maintained under separate cover in the Fairfax County Stormwater Safety Manual. Confined-spaces entry-certified personnel and apparatus are to be used if installation is to be within a pipe inlet to a below-grade junction (pipes greater than > 15” diameter only; for pipes less than 15”, see step 3).

1. Measure outfall pipe and assemble scissors ring with designated extensions. Retract brace by rotating nut counter-clockwise with ratchet.
2. Install sensor carrier and attach bubbler line or AV module to sensor carrier. Attach suction line to low-flow strainer and attach strainer to sensor carrier using cable ties. Insert scissors ring in pipe just upstream of outlet orifice; orient scissors ring so that metal bubbler line outlet is in the invert of pipe, pointing downstream.
3. In the case of 15” diameter or less pipes for within-network installations (i.e., not at an outfall), a remote, street-level installation tool can be used. Sensor carrier, strainer, and tubing are to be attached as described above.
4. The tubing can be secured by attaching to fixed objects such as tree roots or fencing to prevent tubing from laying in the waterway where it may become a target of debris snags. For within-network installations, the tubing can be tied off at the upper step of the closed manhole or threaded through manhole cover and secured on nearby brush until such time as storm event is monitored.

### **Preparation for storm event**

Materials, Equipment, and Supplies:

- Programmable, automated sampler equipped with flow module
- 24 1,000-mL bottle configuration (or 500 mL, if applicable)
- Pro-hanger and harness for automated sampler, if applicable
- Ice
- Bike locks or chain and padlocks
- 12 volt 100Ah Marine battery

## **Meteorology**

Obtain a storm forecast (e.g., from NOAA, Weather Underground, the Weather Channel, or Dark Skies). The meteorologist should be, beforehand, made aware of antecedent dry-time criteria (48 hours); minimum rainfall depth requirement (0.3 inches); and lead time required to gather sampling equipment, travel to the site, obtain ice, and place and program sampler. Such lead time will vary with distance from equipment storage.

1. Attach bubbler line (or area-velocity probe) and suction tubing to sampler. Attach suction line (other end) to low-flow strainer in pipe (if not already).
2. Make sure sampler is level.
3. Place ice in center of sampler.
4. When putting sampler back on top of bottom, make sure straps are outside, so distributor arm doesn't catch (or slip straps between bottle carrier and sampler bottom)
5. Program sampler to capture entire flow event. Program duration should reflect both the duration of the rain and estimated time allowance for sampling of trailing limb (rule of thumb for highly impervious catchments: 4 hours). To determine sample interval in minutes, multiply sum of the rainfall and trailing limb allowance in hours by 2.5.
6. Secure samplers to fencing or manhole steps using bike lock. Stabilize with line if necessary.
7. Attach sampler cover. Be sure that neither the suction line nor the bubbler tubing is pinched between the cover and sampler body. Also check the lines to be sure there are no holes.
8. If placing sampler in manhole using pro-hanger and harness, replace manhole cover by gently sliding horizontally over the hole. If the angle of the manhole is too great as it nears seating, it may press down on the pro-hanger with enough force to dislodge it and cause the sampler to drop to the bottom of the manhole.

## **Storm sample compositing**

### Materials, Equipment, and Supplies:

1. Laptop PC running Flowlink software
2. Discrete sample bottle caps
3. Ice
4. Graduated cylinders (100-mL and 500 mL)
5. Composite container

### Methodology:

1. Open sampler body and examine bottles for presence of liquid. Cap each discrete bottle if containing liquid. Replenish with ice if necessary. Close sampler body and transport it to office/laboratory for sample processing.
2. Download sampler data to laptop PC. Create hydrograph of downloaded level data covering the time that the sampler was onsite in the field. Convert continuous level data to flow rate using Manning's equation and input appropriate coefficients for the specific pipe.
3. Export combined level and flow rate data into.csv file (e.g., "sitename levelflow [date of storm].csv").
4. Import level and flow rate data (name of level & flow files will appear as sites).
5. Construct table of discharges in the usual way, using flow rate data just imported and appropriate sample interval.
6. Export table of discharges to another .csv file (e.g., "sitename discharge [date of storm].csv").
7. Open discharge export file in spreadsheet. Copy 1st 24 bottles and times to template file. The template file will automatically calculate discrete volumes (volumes to add to composite bottle) once the formula is corrected to reflect volume at peak discharge [discrete volume = 1,000 mL or 500 mL for compact sampler].
8. Save the discrete volume file just created in Excel as a new file (e.g., "sitename discrete [date of storm].xls"). Print the spreadsheet and refer to it when compositing. Reduce discrete volumes by a proportional amount if the total volume is greater than the capacity of the 4-L bottle.
9. Use graduated cylinders to measure discrete aliquots.
10. After compositing, wash and rinse plastic bottles with phosphate free soap, 10% nitric acid solution, and deionized water.

Note: because of variations in water level in pipe over time, a discrete sample may be low or nonexistent despite a measurable discharge volume represented by the discrete sample as measured by the flowmeter. This is due to the fixed time frame that the sampler takes samples. At the time that the sampler takes the sample, there may be insufficient water in the pipe despite the fact that there was sufficient water at a different time during the interval between discrete samplings.

# Appendix G: Example Wet Weather Screening Field Data Sheet

## STORM EVENT FAIRFAX COUNTY WET WEATHER SCREENING FIELD DATA

CREW  
 Setup   Comp.   STATION    SVC AREA ID: \_\_\_\_\_ YEAR MONTH DAY

STORM DURATION (hr)    SAMPLE INTERVAL (min)    SAMPLE BEGIN     TIME

TOTAL STORM PRECIP (in)     SAMPLE END


SLOPE: \_\_\_\_\_ DIAMETER: \_\_\_\_\_ SAMPLE COLLECTION DATA:  
 CONSTRUC. MAT'L: \_\_\_\_\_ ROUGHNESS: \_\_\_\_\_ FIRST FLUSH SAMPLES  
 DATE/TIME OF COLLECTION \_\_\_\_\_  
 HYDROGRAPH/COMPOSITE INFORMATION: COMPOSITE SAMPLES  
 DATE/TIME OF COLLECTION \_\_\_\_\_

Bottle	Time	Interval discharge (cf)	Discrete vol
1 1			
1 2			
1 3			
1 4			
1 5			
1 6			
1 7			
1 8			
1 9			
2 0			
2 1			
2 2			
2 3			
2 4			

INSERT TYPE: \_\_\_\_\_  
 MANHOLE ID: \_\_\_\_\_  
 LATITUDE: \_\_\_\_\_  
 LONGITUDE: \_\_\_\_\_  
 SAMPLER SERIAL: \_\_\_\_\_  
 MODULE SERIAL: \_\_\_\_\_  
 pH: \_\_\_\_\_  
 Sp. Cond.: \_\_\_\_\_

REVIEWED BY \_\_\_\_\_ DATE: \_\_\_\_\_ TSJ 03/14

# Appendix H: Chain of Custody Form

 <b>CHAIN-OF-CUSTODY Analytical Request Document</b> Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields				LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here																																																																																											
Company:		Billing Information:		<b>ALL SHADED AREAS are for LAB USE ONLY</b> Container Preservative Type ** Lab Project Manager: ** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other																																																																																											
Address:		Email To:																																																																																													
Report To:		Site Collection Info/Address:																																																																																													
Copy To:		State: County/City: Time Zone Collected: / [ ] PT [ ] MT [ ] CT [ ] ET																																																																																													
Customer Project Name/Number:		State: County/City: Time Zone Collected: / [ ] PT [ ] MT [ ] CT [ ] ET		<b>Analyses</b>		<b>Lab Profile/Line:</b>																																																																																									
Phone:	Site/Facility ID #:	Compliance Monitoring? [ ] Yes [ ] No		<table border="1"> <tr> <th colspan="2">Lab Sample Receipt Checklist:</th> </tr> <tr> <td>Custody Seals Present/Intact</td> <td>Y N NA</td> </tr> <tr> <td>Custody Signatures Present</td> <td>Y N NA</td> </tr> <tr> <td>Collector Signatures Present</td> <td>Y N NA</td> </tr> <tr> <td>Bottles Intact</td> <td>Y N NA</td> </tr> <tr> <td>Correct Bottles</td> <td>Y N NA</td> </tr> <tr> <td>Sufficient Volume</td> <td>Y N NA</td> </tr> <tr> <td>Samples Received on Ice</td> <td>Y N NA</td> </tr> <tr> <td>VDA - Headpace Acceptable</td> <td>Y N NA</td> </tr> <tr> <td>USDA Regulated Soils</td> <td>Y N NA</td> </tr> <tr> <td>Samples in Holding Time</td> <td>Y N NA</td> </tr> <tr> <td>Residual Chlorine Present</td> <td>Y N NA</td> </tr> <tr> <td>Cl Strips: _____</td> <td></td> </tr> <tr> <td>Sample pH Acceptable</td> <td>Y N NA</td> </tr> <tr> <td>pH Strips: _____</td> <td></td> </tr> <tr> <td>Sulfide Present</td> <td>Y N NA</td> </tr> <tr> <td>Lead Acetate Strips: _____</td> <td></td> </tr> <tr> <td colspan="2">LAB USE ONLY: Lab Sample # / Comments:</td> </tr> </table>		Lab Sample Receipt Checklist:		Custody Seals Present/Intact	Y N NA	Custody Signatures Present	Y N NA	Collector Signatures Present	Y N NA	Bottles Intact	Y N NA	Correct Bottles	Y N NA	Sufficient Volume	Y N NA	Samples Received on Ice	Y N NA	VDA - Headpace Acceptable	Y N NA	USDA Regulated Soils	Y N NA	Samples in Holding Time	Y N NA	Residual Chlorine Present	Y N NA	Cl Strips: _____		Sample pH Acceptable	Y N NA	pH Strips: _____		Sulfide Present	Y N NA	Lead Acetate Strips: _____		LAB USE ONLY: Lab Sample # / Comments:																																																							
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Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P13

Standard Operating Procedures for the MS4 Biological  
Stream Monitoring Program

VSMP Permit Number VA0088587  
9-30-2022



**Department of Public Works and Environmental Services**  
**POLICIES AND PROCEDURES**

Memorandum No.: SWPD16-07

**SUBJECT: Standard Operating Procedures for the MS4 Biological Stream Monitoring Program**

Effective: 09/01/2016

Revised:

Approval:

A handwritten signature in black ink, appearing to be "J. [unclear]", written over a horizontal line.

**I. Purpose**

Fairfax County's (renewed) 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes provisions to evaluate the condition of select streams within the county by conducting biological stream monitoring. The applicable requirement of the permit (Part I, Section C.1) states:

*The permittee shall continue to implement a biological stream monitoring program to evaluate the condition of select stream sites within Fairfax County as follows:*

- *Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.*
- *Monitoring shall be conducted twice per year with one sample collected between July 1<sup>st</sup> and December 31<sup>st</sup> and one sample collected between January 1<sup>st</sup> and June 30<sup>th</sup> each year at each "selected stream site."*
- *The permittee shall use a biological stream monitoring approach based on "USEPA's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers" or other method approved by the Department, and shall include an assessment of the benthic macroinvertebrate community and habitat assessment.*

**SPECIFIC REPORTING REQUIREMENTS:**

- *The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*
- *Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*

This Biological Stream Monitoring Program Standard Operating Procedure (SOP) describes Fairfax County's site selection and sampling protocols for executing this program and provides a framework for full compliance with the above MS4 permit requirements.

This document contains the following:

- Site Selection Protocol
- Field and Lab Protocols for Biological Stream Monitoring
- Data Management/Quality Control
- Products of the Program
- References
- Appendices

## II. MS4 Biological Stream Monitoring Program

### A. Program Goals

Since 2007, Fairfax County has been conducting an extensive monitoring program in partnership with the United States Geological Survey (USGS). This program was designed by USGS and Fairfax County Stormwater Planning staff to accomplish the following objectives:

- Generate long-term monitoring data to describe:
  - Current water-quality (sediment and nutrients) and quantity conditions
  - Trends in water-quality and quantity
  - Nutrient and sediment loads and yields
  - Current biological (benthic macroinvertebrate) conditions
  - Trends in biological (benthic macroinvertebrate) conditions
- Evaluate relationships between observed conditions/trends and stormwater best management practice (BMP) implementation throughout Fairfax County.
- Transfer the understanding gained from intensively monitored watersheds to less-intensively monitored ones.

To utilize the existing monitoring program network to support the MS4 Permit, Fairfax County will continue ongoing benthic macroinvertebrate sampling at selected sites while adhering to the monitoring frequency specified in the MS4 Permit. The robust dataset already collected can provide significant value to assist with data interpretation with respect to long-term patterns and trends.

### B. Site Selection Protocol

For the MS4 Permit, Fairfax County has chosen the five most intensely monitored sites within the existing partnership study with USGS. The site selection was based on available watershed characterization data, the presence of a Board of Supervisors-adopted watershed management plan, the timetable for BMP implementation, and local knowledge of the watersheds. In general, an effort was made to limit the size of basins to 6 mi<sup>2</sup> or smaller to ensure that changes in the basins were detectable. Watershed characterization data from the Fairfax County watershed management plans along with other available datasets were used to classify and evaluate all potential monitoring basins. Ultimately, the primary factors used in the analysis and site selection process were:

- Land Use (10 land use classes)
- Presence of water quality and/or quantity controls (and % area served by controls within each basin)
- Existing Index of Biotic Integrity (IBI) scores
- Percent impervious cover in each basin
- Average basin slope
- Planned stormwater BMP implementation

The goal is to ensure that the monitoring network effectively characterizes the range of watershed conditions within Fairfax County. To accomplish this goal, a cluster analysis was performed (using the statistical package SPLUS) to group the basins into similar types and to select representative sampling sites from the resultant clusters. Hierarchical clustering was performed, and the complete linkage approach was used for joining clusters because little was known about the variance and sample size for each cluster. Land use was shown to be the most influential factor in the cluster analysis.

**Table 1: Site Name and Characterization for Fairfax County MS4 Biological Stream Monitoring Program.**

Site Name	Watershed	Drainage Area (mi <sup>2</sup> )	% Impervious Area
Dead Run	Dead Run	2.09	30.97
Difficult Run	Difficult Run	5.47	27.61
Flatlick Branch	Cub Run	4.26	28.60
Long Branch	Accotink Creek	3.79	25.66
South Fork Little Difficult Run	Difficult Run	2.71	14.02

A map of the five biological stream monitoring locations is in Appendix A.

### III. Field Protocol for MS4 Biological Stream Monitoring Program

This section provides details of the protocols to be followed during biological stream monitoring and includes descriptions of safety procedures, sampling frequency, proper sampling equipment, and sampling protocols.

#### A. Health and Safety

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. In general, the following safety protocol is followed to protect the field staff:

- Perform field work in teams of at least two.
- Bring mobile phone and first aid kit on all field site visits.
- Exercise caution when encountering any wildlife and hazardous plants.
- Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.

Additional information on Health and Safety may be found in Appendix B, including information on field staff conduct, personal protective equipment, confined space entry, dangerous flora and fauna, unknown hazardous substances and wastes, blood-borne pathogens, remote areas, weather-related hazards, and heat and cold stress.

#### B. Sampling Frequency

As specified by the permit, monitoring shall be conducted twice per year with sampling windows between July 1<sup>st</sup> to December 31<sup>st</sup> and January 1<sup>st</sup> to June 30<sup>th</sup> at each of the 5 established monitoring locations. Fall sampling will be conducted in the October/November timeframe and the spring sampling will be conducted in the March/April timeframe to coincide with Fairfax County’s current biological monitoring window.

#### C. Field Work Preparation

##### A. Equipment Checklist

Before heading out into the field, staff should assemble the following equipment:

- Standard D-frame dip net, 500-micrometer ( $\mu\text{m}$ ) opening mesh, 0.3-meter (m) width (~ 1.0 ft. frame width)
- Sieve bucket, with 500  $\mu\text{m}$  opening mesh
- Large polyethylene wash tray
- Sieve with 500  $\mu\text{m}$  opening mesh
- 2-liter (L) HDPE Nalgene® sample jars, lids
- Forceps
- Packing tape
- Pencils, clipboard & calculator
- Benthic Macroinvertebrate Field Sheet (Appendix C)
- Habitat assessment form (Appendix D)
- Site maps
- Waders and insulated neoprene gloves
- Weatherproof labels for bottles
- Chemical proof labels for inside bottles
- Permanent/indelible markers

#### D. Benthic Macroinvertebrate Sample Collection

Benthic macroinvertebrate communities are a major component of any healthy stream system. They are an important link in the aquatic food web, forming the core diet of many stream fishes and other aquatic life forms. These organisms are also useful indicators of water quality, due to their short life spans and their varying tolerances to disturbance, including chemical, organic, and sediment pollution.

##### A. Benthic Field Sampling

Selected sites will be sampled in the early spring between March and April (prior to the spring/summer emergence of many adult aquatic insects). The 100-m sampling reaches will be sampled using the “20-Jab” or “multi-habitat” Mid-Atlantic Coastal Streams Workgroup (MACS) method (USEPA, 1997). This method was developed specifically for streams with variable habitat structure and adopted for use in USEPA’s Rapid Bioassessment Protocol II (RBP II) for benthic macroinvertebrate sampling in streams and wadeable rivers (Barbour et al., 1999). Observed habitats within the sample reach are proportionally sampled using twenty 0.5-m- “jabs” with the D-frame net. Habitats are designated as vegetated (undercut) banks, submerged macrophytes (aquatic vegetation), sand, cobble, and snags. Samples collected in the field have the larger organic debris removed and then are placed in 2L HDPE Nalgene® jars. Sample jars are labeled both internally and externally with the site code, collection date and time, sample number and the collection team’s initials. The collecting team members should ensure that the information on the internal and external labels match each other, as well as the information on the site map and field data sheet. Labeled jars are then transported to a laboratory where they are logged in on the Benthic Macroinvertebrate Sample Log-In Sheet (Appendix E), preserved with 95% denatured ethanol and stored in flameproof cabinets for later subsampling and taxonomic identification. Samples selected for processing (subsampling, sorting and enumeration) by an outside contractor are also logged in on the Fairfax County Benthic Macroinvertebrate Sample Chain-of-Custody Sheet (Appendix F).

## B. Benthic Macroinvertebrate Subsampling and Identification

The following laboratory equipment will be used to subsample, sort, enumerate and identify benthic macroinvertebrate samples:

- Previously collected benthic sample in 2L HDPE Nalgene® jars(s)
- 8-inch diameter sieve with 500- $\mu$ m mesh
- Benthic sample sorting grid (30 squares) with 500- $\mu$ m mesh
- Polyethylene wash tray
- Dissecting microscopes (stereoscopes)
- Fiber-optic light source
- 95% ethanol (denatured)
- 20 milliliter (ml) screw top glass specimen vials (with Teflon™ lids) and label tape
- 9-unit laboratory counter with grand total counter
- Petri dishes & extra-fine/jewelers forceps
- Benthic Macroinvertebrate Sorting Log-In Sheet (Appendix G)
- Benthic Macroinvertebrate Identification Form (Appendix H)

Field samples selected for in-house subsampling, sorting and enumeration are logged in on the Benthic Macroinvertebrate Sorting Log-in Sheet. Each sample is rinsed and spread over the surface of a 30 x 36-centimeter (cm), 500- $\mu$ m mesh sample sorting grid (Caton, 1991) [very large volume samples may be divided into two sorting grids]. The sorting grid is placed in enough water to cover the sample and allowed to hydrate for at least 10 minutes. A subsample of individuals is picked or “sorted” from a randomly selected square subdivision marked on the grid’s surface (30 total squares). The sorting is accomplished by removing debris and organisms from the randomly selected square, placing this mixture into a water-filled white plastic tray which is illuminated via fiber optic lights, and carefully removing all organisms (a microscope is not used for subsampling but may be used to verify an organism). It is quite helpful to inspect and remove larger debris from the tray. Once that square is fully picked, another randomly selected square is then picked until a minimum of 200 (not to exceed 240) organisms are obtained. If picking through an entire grid is likely to result in a subsample of greater than 240 organisms, then that grid is subsampled in the same manner as before to decrease the likelihood of exceeding 240 organisms. Subsampling is accomplished by spreading the contents of a grid into another gridded pan and further sorting by picking grids one at a time until the target number is reached. If a specimen lies across 2 squares, it belongs to the square containing its head.

Specimens fall into one of three groups; 1) Chironomidae, 2) Oligochaeta, and 3) all others. Organisms that are not counted in the sample include vertebrates (e.g. salamanders, newts, fish), zooplankton (i.e. copepods), non-aquatic macroinvertebrates (e.g. adult dipterans), or aquatic macroinvertebrate individuals too damaged to identify (e.g. lacking a head). Organisms from each site’s subsample are tallied by group and transferred to one of three sample vials (one vial for each respective group), preserved with 95 percent ethanol, and labeled with the following information:

- Site code
- Date collected (found on sample jar label)
- Date sorted



- Sorted by (sorter's initials)
- Particular sample group (C = Chironomidae, O = Oligochaeta, • = others).
- Number of organisms in the particular group vial
- Total number of organisms in the sub-sample ( $200 < n < 240$ )

The total number of “squares” from the sorting grid that were picked to reach the 200 organism target number is recorded on the Benthic Macroinvertebrate Lab Bench Sheet. In compliance with protocols, after laboratory processing is completed for a given sample, all sieves, pans, trays, etc., that have come in contact with the current sample will be rinsed thoroughly, examined carefully, and picked free of organisms or debris. Any organisms found are added to the sample residue, which is then re-preserved in 95% ethanol.

Once site samples are subsampled, sorted and labeled, taxonomic identifications will then be made to the genus level (whenever possible) using microscopes. Genus level classification of macroinvertebrate samples will be performed using select taxonomic keys (e.g. Pennak, 1989, Peckarsky et al., 1990, Wiggins, 1996, Merritt et al., 2008, Stewart and Stark, 2002). Certain specimens may be physically damaged to such an extent that accurate genus-level identification is not possible. In these situations, the lowest possible taxonomic identification will be noted on the data sheet. Time constraints prevent the more detailed examinations required to identify taxa such as aquatic worms (Oligochaeta) and midge larvae (Chironomidae) to this level. Therefore, oligochaetes will be identified at the class level, and chironomids will be identified at the family level. The representatives in each respective taxonomic grouping will be enumerated, recorded and summed on the Benthic Macroinvertebrate Identification Form (Appendix H). The final total number of organisms will be recorded along with the date the identification was completed and the taxonomist's initials. All individuals from the subsample will then be returned to the 95 percent ethanol solution and held for at least one year.

#### E. Habitat Assessment

Habitat assessments will be conducted at each monitoring location using the USEPA's Habitat Assessment Form (Appendix D). The assessments will be conducted in conjunction with the benthic macroinvertebrate sampling and will be a collaborative effort between the members of the sampling team.

#### F. Data Analysis

Each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends. The Virginia Stream Condition Index (VASCI) (Burton, 2003) will be used with the benthic macroinvertebrate data to assess site conditions and long term trends of biological health.

### IV. Data Management/Quality Control

#### A. Documentation of Field Monitoring

A dedicated sample label (Figure 1) will be created in the field and applied to sample containers for each collected sample. The label will include the following information:

- Site Name
- Sample Date

- Sample Time
- Investigators
- Number of sample containers
- Any comments relevant to the stream conditions

Fairfax County WPAB Benthic Sample			
Site ID:	Sample #		of
Collected by:	Date:		
QC site: Yes No	Time:	AM / PM	
Comments:			
<b>Warning: Sample contains 95% Ethanol as a preservative. Please see the SDS for safety instructions.</b>			

Figure 1: Benthic sample jar label

#### B. Chain of Custody

Chain of custody (COC) forms (Appendix F), are a permanent record of transfer of sample custody. Custom COC forms for this project are located at the Springfield Lab and are filled out when samples are delivered and when they are processed.

#### C. Quality Control

Training for benthic macroinvertebrate sampling, lab protocols and habitat assessment will occur on a yearly basis to refresh current field personnel and teach new field staff the protocols used.

### V. Anticipated Products of the Program

#### A. Biological Stream Monitoring Yearly Report

- A report on biological stream monitoring will be prepared for use in the development of the County’s annual MS4 report to VA DEQ at the end of each MS4 reporting year (July 1 – June 30). The annual report due October 1, 2016 will include the list of sites to be monitored during the term of the state permit and monitoring protocols. Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.

### VI. Administrator of the SOP

This SOP document is administered by the Stream Monitoring Section within the Stormwater Planning Division. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

## VII. References

- Barbour, M. T., J. Gerritsen, B. D. Snyder, and J. B. Stribling. 1999. Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates and Fish, Second Edition. EPA 841-B-99-002. U.S. Environmental Protection Agency; Office of Water; Washington, D.C.
- Burton, J. and J. Gerritsen. (2003). A Stream Condition Index for Virginia Non-coastal Streams. Tetra Tech Inc., Owings Mill, MD
- Caton, L. W. 1991. Improving subsampling methods for the EPA "Rapid Bioassessment" benthic protocols. *Bulletin of the North American Benthological Society* 8(3):317-319.
- Merritt, R. W., K. W. Cummins, and M. B. Berg. 2008. An Introduction to the Aquatic Insects of North America. Fourth Edition. Kendall Hunt Publishing Company. Dubuque, IA
- Peckarsky, B. L., P. Fraissinet, M. A. Penton, and D. J. Conklin, Jr. 1990. Freshwater macroinvertebrates of Northeastern North America. Cornell University Press. Ithaca, NY
- Pennak, R. W. 1989. Fresh-water invertebrates of the United States. 3<sup>rd</sup> Edition. John Wiley and Sons, Inc. New York.
- Stewart, K. W. and B. P. Stark. 2002. Nymphs of North American Stonefly Genera. Second Edition. The Caddis Press. Columbus, Ohio.
- US Environmental Protection Agency; 1997; "Field and laboratory methods for macroinvertebrate and habitat assessment of low gradient nontidal streams"; Mid-Atlantic Coastal Streams Workgroup, Environmental Services Division, Region 3, Wheeling, WV; 23 pages with appendices.
- Wiggins, G. B. 1996. Larvae of the North American Caddisfly Genera (Trichoptera). Second Edition. University of Toronto Press Incorporated. Toronto, Ontario.

## VIII. Appendices

- A. Fairfax County MS4 Biological Monitoring Locations
- B. Health and Safety Guidance for Biological Stream Monitoring Field Work
- C. Benthic Macroinvertebrate Field Sheet
- D. Habitat Assessment Form
- E. Benthic Sample Log-In Sheet
- F. Benthic MS4 Chain of Custody Form
- G. Benthic Macroinvertebrate Sorting Log-In Form
- H. Benthic Macroinvertebrate Identification Form

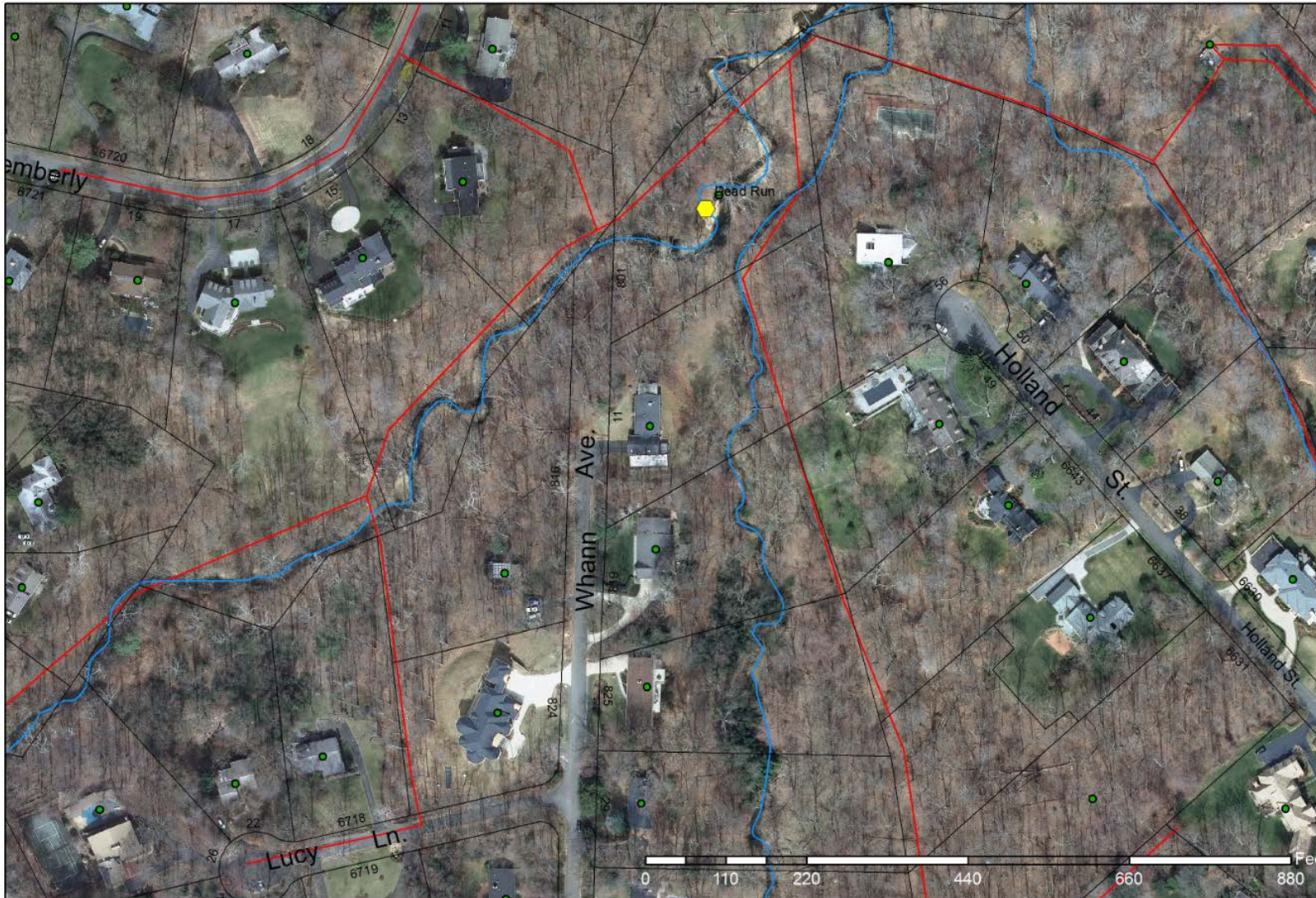
Appendix A: Fairfax County MS4 Biological Monitoring Locations







# Dead Run USGS Sites Tax Map 21-2







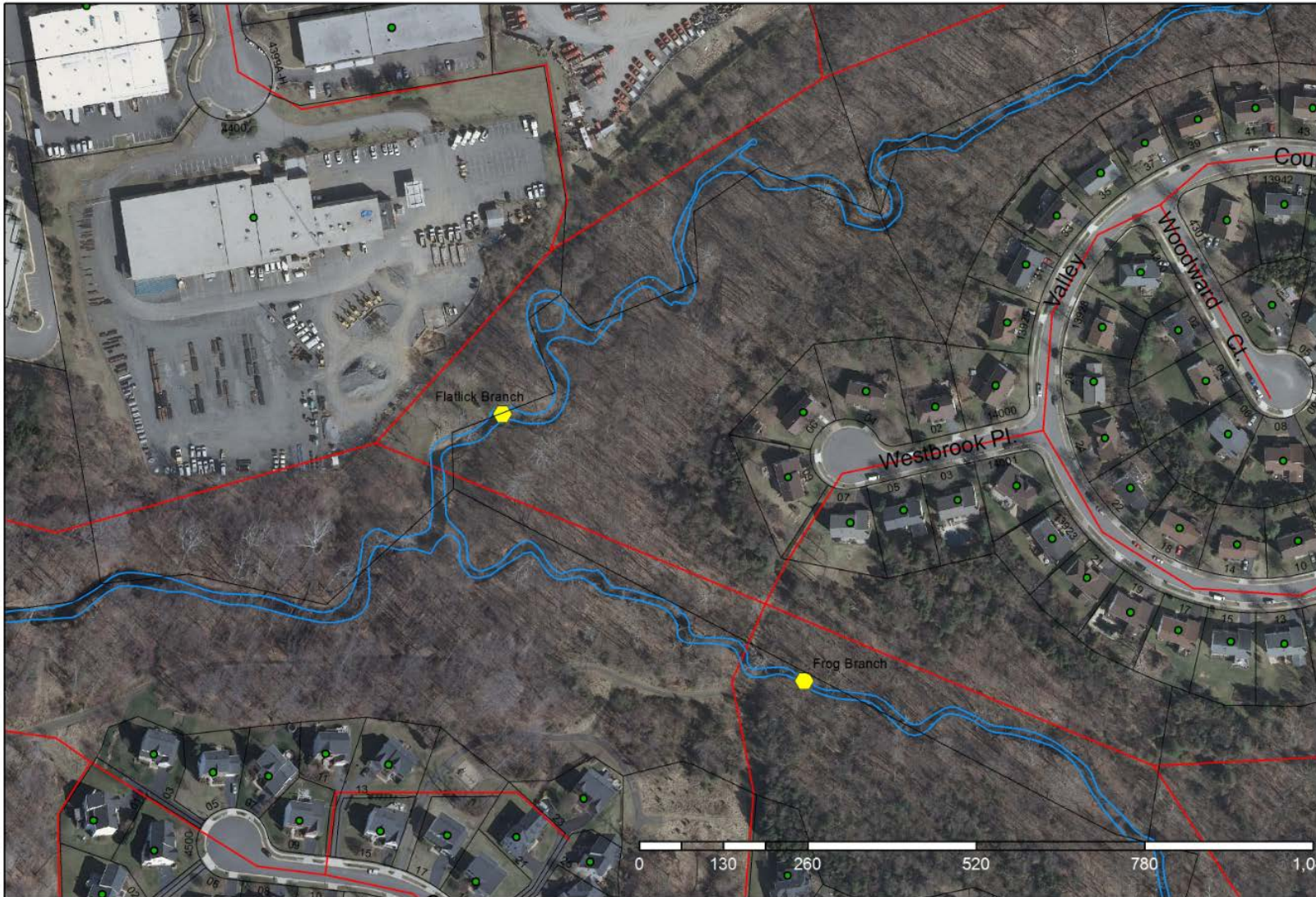
# Difficult Run USGS Sites Tax Map 47-1







# Flatlick and Frog Branches (Cub Run) USGS Sites Tax Map 44-2







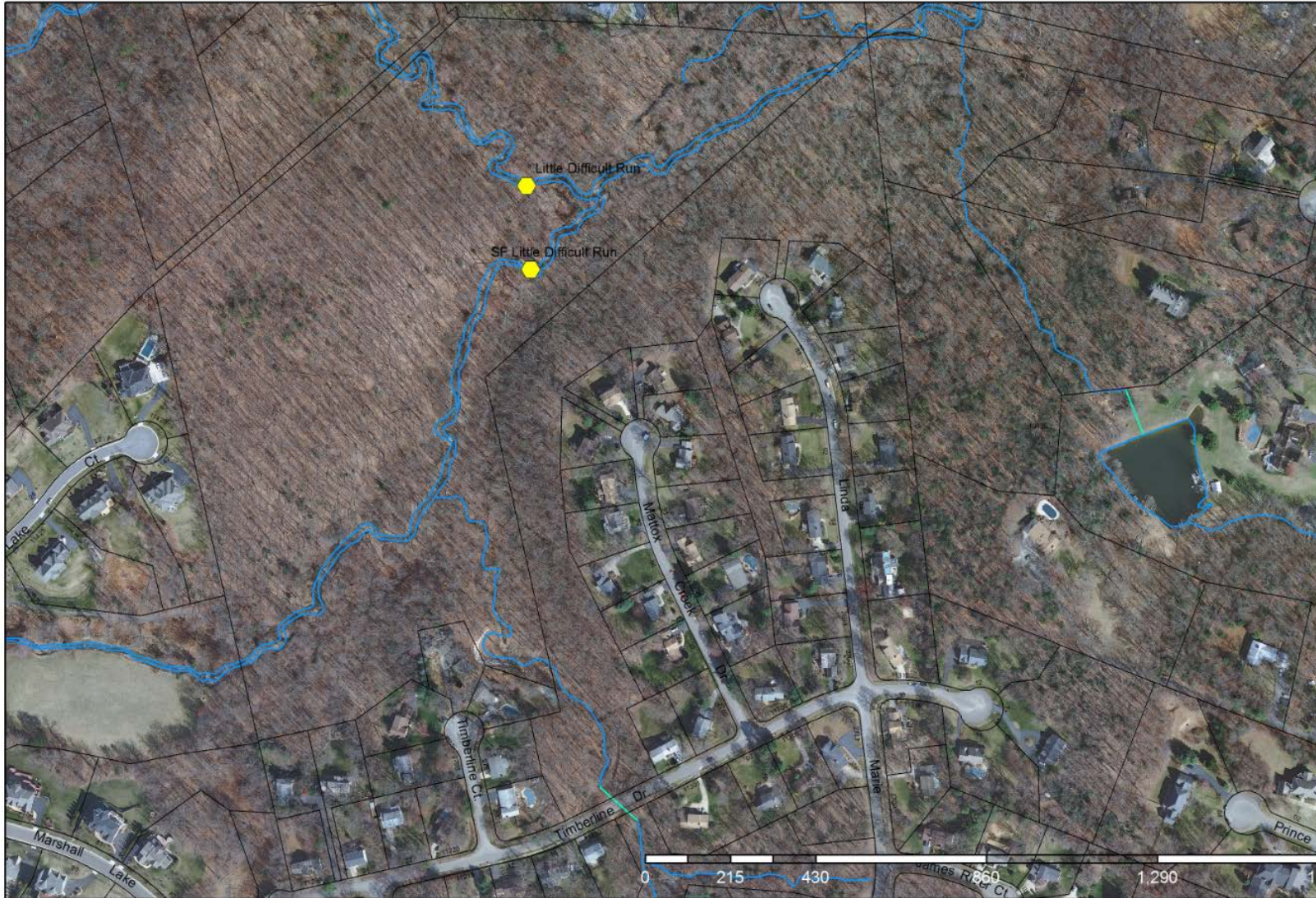
# Long Branch (Accotink Creek) USGS Site Tax Map 70-3







# N. & S. Fork Little Difficult Run USGS Sites Tax Map 36-2



## Appendix B: Health and Safety Guidance for Biological Stream Monitoring Field Work

### General

Health and safety responsibility and accountability involves every employee. The collective effort of all employees in providing a healthy and safe work environment will minimize or eliminate the potential for accidents. In general, field sampling will require the following safety protocols to protect the field staff:

1. Perform field work in teams of at least two.
2. Bring cell phone and first aid kit on all field site visits.
3. Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
4. Take proper precautions (e.g. seek shelter) during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
5. Streams may contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

### Conduct

All field staff are expected to:

- Understand and comply with health and safety policies. Each employee is not only responsible and accountable for his/her own actions, but for those others around him/her.
- All employees shall show professional courtesy to fellow employees, clients, subcontractors, regulators, the general public and visitors.
- Understand and follow good health and safety practices.
- Horseplay, practical joking, inattention to work or other inappropriate accident-causing behavior will not be tolerated.
- Use of alcohol or controlled substances is prohibited.
- While traveling to and from the job site, employees shall: obey all federal, state and local regulations regarding seat belt use, all traffic laws, and any other laws regarding proper conduct in public areas.

### Personal protective equipment (PPE)

Engineering and administrative controls will be used as the primary means of exposure control, as required by OSHA standards. However, PPE may also be necessary to further minimize potential employee exposure. All employees shall dress appropriately for the tasks to be performed. Specialized health and safety equipment, including PPE, monitoring equipment, and other devices designed to protect the employee shall be issued to the employee on an as-needed basis.

Employees performing field activities and certain laboratory functions have the potential of coming in contact with hazardous materials. Many of these hazardous materials can cause significant injury or illness through acute or chronic exposures. For field work (including industrial operations), all field employees are required to wear the following basic PPE:

- Appropriate work clothing
- ANSI-approved steel-toed, steel-shank boots
- ANSI-approved safety glasses
- ANSI-approved hard hat (when overhead hazards exist)
- Hearing Protection (when appropriate)
- Rain Gear (when appropriate)

### **Confined space entry program**

A confined space is any location not intended for human occupation, has limited or no ventilation, has the potential for containing dangerous or lethal atmospheres, and has limited ingress/egress. OSHA has addressed confined space entry requirements and procedures in 29 CFR 1910.146 (Permit Required Confined Spaces) and 1926.651 (Excavations). Confined space entry will not be performed under any circumstances during this monitoring.

### **Dangerous flora and fauna**

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); dogs; rabid mammals; and poisonous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction. Appropriate, suitable PPE is provided to all field staff (e.g. insect repellent, first aid kits, etc.)

### **Blood borne pathogens (BBP)**

Exposure to BBP is possible in the case of certain emergency situations. Personnel may be exposed to body fluids such as blood, saliva, vomit, mucus or others. These fluids could contain pathogens that have the potential for causing disease in humans. Should personnel be required to administer life-saving procedures, such as CPR, the following procedures will be followed to minimize the potential for exposure:

1. Wear disposable gloves when hand contact with blood, mucus membranes, non-intact skin or other potentially infectious materials could be involved;
2. Use disposable mouthpieces, pocket masks or other ventilation devices for administering artificial ventilation;
3. Wash hands with soap and water after administering first aid;
4. In the case of eye contact, flush eyes using an eye wash for at least 15 minutes;
5. Remove garments contacted by blood or other body fluids as soon as possible;
6. Do not eat, drink, smoke or handle contact lenses in areas with possible BBP exposure; and
7. Persons cleaning up an accident scene should not pick up broken glass or other sharp objects by hand. All clothes and other items at the first aid scene should be safely secured prior to leaving.

Employees who may have been exposed to BBPs should report the incident at once.

## **Remote areas**

The sampling team may be located in areas not readily accessible by vehicle. Radio or phone communication will be maintained from the sampling team to a base station in the event of an emergency.

## **Heavy lifting**

It may be necessary to carry sampling equipment (e.g., coolers, sampling containers, and equipment) during the course of the field activities. Care must be taken to avoid injury while carrying equipment to the sampling locations.

## **Hand tools**

Some of the field activities and sampling procedures may require the use of hand tools with sharp edges including machetes, scissors, clippers, knives, and razor blades. Care must be taken during their use to prevent injuries from cuts.

## **Weather related hazards**

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. Field sampling will not take place in the event of adverse weather conditions.

## **Heat stress**

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps. The signs and symptoms of heat cramps include:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes shade, rest, and fluid replacement. If the individual has not recovered within ½ hour, then he/she will be transported to the hospital for medical attention.

Heat exhaustion usually occurs in a healthy individual who has been exposed to excessive heat while working or exercising. Blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion include:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin, with heavy perspiration;
- Skin appears pale;
- Fatigue, weakness, and/or dizziness; and



- Elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids. If the individual has not recovered within ½ hour, he/she will be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat, and their body systems become overwhelmed by heat and begin to stop functioning. This condition is a medical emergency, requiring the immediate cooling of the victim and transport to the hospital immediately. The signs and symptoms of heat stroke include:

- Victim has stopped sweating;
- Dry, hot, red skin;
- Body temperature approaching or above 105° F;
- Dilated (large) pupils; and
- Loss of consciousness; victim may lapse into a coma.

Local weather conditions may produce an environment which will require restricted work schedules in order to protect employees. The Field Team Leader will observe workers for any potential symptoms of heat stress. Adaptation of work schedules and training in recognition of heat stress conditions will help prevent heat-related illnesses from occurring.

### **Cold stress**

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. The three categories of local cooling include:

- Frost nip - characterized by a blanching or whitening of the skin;
- Frost bite - skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient; and
- Freezing - skin tissue is cold, pale, and solid.

Frost nip and frost bite first aid includes covering the affected area with warmth and retreating to a warm area. Frozen tissue is a medical emergency, and the victim will be transported to the hospital immediately.

General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. The signs and symptoms of mild hypothermia include:

- Shivering;
- Numbness; and
- Drowsiness.

First aid for mild hypothermia includes using heat to raise the individual's body temperature. Heat may be applied to the victim in the form of heat packs, hot water bottles, and blankets.



The signs and symptoms of severe hypothermia include:

- Unconsciousness;
- Slowed respiration or respiratory arrest;
- Slowed pulse or cardiac arrest;
- Irrational or stuporous state; and
- Muscular rigidity.

First aid for severe hypothermia includes handling the victim very gently; rough handling may set off an irregular heartbeat. Do not attempt to re-warm the severely hypothermic victim; re-warming may cause the development of an irregular heartbeat. Severe hypothermia is a medical emergency, and the victim will be transported to the hospital immediately.

Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

Appendix C: Benthic Macroinvertebrate Field Sheet (Page 1)

Site Code: \_\_\_\_\_

**Benthic Macroinvertebrate Sampling  
Data Sheets**

Watershed:	Date:	Start Time:
Stream Order:	Recorder:	Finish Time:
Investigators:	QC Site:    Yes    No	

Habitat Types:		Field Duplicate Collected Yes / No (circle)	
	Tally	# of Jabs:	
Sand	_____	_____	
Snags	_____	_____	
Cobble	_____	_____	
Vegetated Banks	_____	_____	
Submerged Macrophytes	_____	_____	
# of jabs = tally/total number of tallies x 20			
*If habitat type is less than 5% of area, do not count it toward jabs			

Water Quality			
Temperature	<input type="text"/>	<input type="text"/>	°C
% Saturation	<input type="text"/>	<input type="text"/>	%
Dissolved Oxygen	<input type="text"/>	<input type="text"/>	mg/l
Conductivity	<input type="text"/>	<input type="text"/>	µS/cm
Specific Conductance	<input type="text"/>	<input type="text"/>	(µS/cm)/c°
pH	<input type="text"/>	<input type="text"/>	

Weather		
Today:	storm/heavy rain	showers (intermittent)
	rain (steady)	sunny
	partly cloudy	cloudy
Past 24 hrs	storm/heavy rain	showers (intermittent)
	rain (steady)	sunny
	partly cloudy	cloudy

Riparian Zone/ Instream Features	Predominant Surrounding Landuse		Local Streambank and Channel Bottom Erosion			
	Forest	Commercial	None	Low	Moderate	Heavy
	Field/Pasture	Industrial				
	Agricultural	Golf Course				
	Residential	Other				
	Canopy Cover			Riparian Zone Width (ft)		
	Open	Moderate	Heavy	LB	RB	
				0-25	0-25	
				25-50	25-50	
				50-75	50-75	
				75-100	75-100	
				100+	100+	
	Channelized?					
	Yes	No				

**Possible impairments to benthics (i.e. golf course, industrial area)**

**Other Comments:**

## Appendix C: Benthic Macroinvertebrate Field Sheet (page 2)

**Cobble (hard substrate)** - Cobble will be prevalent in the riffles (and runs), which are a common feature throughout most mountain and piedmont streams. In many high-gradient streams, this habitat type will be dominant. However, riffles are not a common feature of most coastal or other low-gradient streams. Sample shallow areas with coarse (mixed gravel, cobble or larger) substrates by holding the bottom of the dip net against the substrate and dislodging organisms by kicking the substrate for 0.5 m upstream of the net.

**Snags** - Snags and other woody debris that have been submerged for a relatively long period (not recent deadfall) provide excellent colonization habitat. Sample submerged woody debris by jabbing in medium-sized snag material (sticks and branches). The snag habitat may be kicked first to help dislodge organisms, but only after placing the net downstream of the snag. Accumulated woody material in pool areas are considered snag habitat. Large logs should be avoided because they are generally difficult to sample adequately.

**Vegetated banks** - When lower banks are submerged and have roots and emergent plants associated with them, they are sampled in a fashion similar to snags. Submerged areas of undercut banks are good habitats to sample. Sample banks with protruding roots and plants by jabbing into the habitat. Bank habitat can be kicked first to help dislodge organisms, but only after placing the net downstream.

**Submerged macrophytes** - Submerged macrophytes are seasonal in their occurrence and may not be a common feature of many streams, particularly those that are high-gradient. Sample aquatic plants that are rooted on the bottom of the stream in deep water by drawing the net through the vegetation from the bottom to the surface of the water (maximum of 0.5 m each jab). In shallow water, sample by bumping or jabbing the net along the bottom in the rooted area, avoiding sediments where possible.

**Sand (and other fine sediment)** - Usually the least productive macroinvertebrate habitat in streams, this habitat may be the most prevalent in some streams. Sample banks of unvegetated or soft soil by bumping the net along the surface of the substrate rather than dragging the net through soft substrates; this reduces the amount of debris in the sample.

Appendix D: Habitat Assessment Form (Page 1)

<b>US EPA RBP Habitat Assessment Reference Sheet for Piedmont/Triassic Areas (modified)</b>				
(front)				
<b>Habitat Parameter</b>	<b>Category</b>			
	<b>Optimal</b>	<b>Suboptimal</b>	<b>Marginal</b>	<b>Poor</b>
1) Epifaunal Substrate/ Available Cover	>70% of substrate favorable for epifaunal colonization & fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e. logs/snags that are not new fall and not transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	<20% stable habitat; lack of habitat is obvious; substrate unstable/lacking
Score _____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2) Embedded-ness	Gravel, cobble & boulder particles in riffles and runs are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble & boulder in riffles and runs particles are 25-50% surrounded by fine sediment.	Gravel, cobble & boulder particles in riffles and runs are 50-75% surrounded by fine sediment.	Gravel, cobble & boulder particles in riffles and runs are >75% surrounded by fine sediment.
Score _____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3) Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep & fast-shallow, relative to stream size).	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 regimes present (if fast-shallow or slow-shallow are missing, score lower).	Dominated by 1 velocity/depth regime (usually slow-deep).
Score _____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4) Sediment Deposition	<5% of the bottom affected by sediment deposition, little or no enlargement of islands or point bars.	5-30% of the bottom affected; slight deposition in pools; may be some new increase in bar formation, mostly from gravel, sand or fine sediment;	30-50% of the bottom affected; sediment deposits at obstructions, constrictions & bends; moderate deposition of pools prevalent; may be moderate deposition of new gravel, sand or fine sediment on old & new bars.	>50% of the bottom affected; heavy deposits of fine material, increased bar development; score lower if pools absent due to substantial sedimentation.
Score _____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5) Channel Flow Status	Water reaches base of both lower banks and fills >75% of channel, minimal amount of channel substrate is exposed.	Water fills 75-50% of the available channel; or <50% of channel substrate is exposed	Water fills 50-25% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools, water fills <25% of channel.
Score _____	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

Appendix D: Habitat Assessment Form (Page 2)

<b>US EPA RBP Habitat Assessment Reference Sheet for Piedmont/Triassic Areas (modified)</b>				
<b>(back)</b>				
6) Channel Alteration	Channelization or dredging absent or minimal, <10% of reach disrupted; no obvious shoring structures; may have recovered from past channelization; stream with normal pattern.	Some channelization present, 10-40% of reach channelized or disrupted; may be recovering from past channelization, stream is developing a normal pattern.	Channelization extensive; shoring structures present on both banks; 40-80% of stream reach channelized & disrupted; stream does not have a normal pattern.	Banks shored with gabion or cement; >80% of the stream reach channelized & disrupted, stream is a straight channel. Instream habitat greatly altered or removed entirely.
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7) Frequency of riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by stream width is <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.	Occurrence of riffles infrequent; distances between riffles divided by stream width is between 7 to 15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by stream width is between 15 to 25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided stream width is a ratio of >25.
Score	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8) Bank Stability	Banks stable; evidence of erosion or bank failure absent/minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
Score (RB)	Right bank 10 9	8 7 6	5 4 3	2 1 0
Score (LB)	Left bank 10 9	8 7 6	5 4 3	2 1 0
9) Bank Vegetative Protection	>90% of the streambank surfaces covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	<50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height
Score (RB)	Right bank 10 9	8 7 6	5 4 3	2 1 0
Score (LB)	Left bank 10 9	8 7 6	5 4 3	2 1 0
10) Riparian Vegetative Zone Width	Width of riparian zone >40 meters; human activities (parking lots, roadbeds, clear-cuts, lawns or crops) have not impacted zone.	Width of riparian zone 40-20 meters; human activities have impacted zone only minimally.	Width of riparian zone 20-10 meters; human activities have impacted zone a great deal.	Width of riparian zone <10 meters; little or no riparian vegetation due to human activities
Score (RB)	Right bank 10 9	8 7 6	5 4 3	2 1 0
Score (LB)	Left bank 10 9	8 7 6	5 4 3	2 1 0





### BENTHIC MS4 SAMPLE CHAIN OF CUSTODY FORM

<b>Name:</b> Fairfax County DPWES/SWPD <b>Address:</b> 12000 Government Center Parkway Suite 449 Fairfax, VA 22035 <b>Phone Number:</b> 703-324-5500			<b>Delivered to:</b> DPWES Water Quality Lab 6800 Industrial Rd, Springfield, VA 22151	
			<b>Lab Phone #:</b> <b>Lab Contact:</b> <b>Lab Email:</b>	
<b>Date Sampled</b>	<b>Time Sampled AM/PM</b>	<b>Site ID</b>	<b>Sample Location Stream Name</b>	<b>Sample Type</b>
_/_/____	_____			<b>Benthic</b>



Collected/Relinquished by:			
Print Name	Signature	Date/Time Collected	Date/Time Relinquished
Relinquished to:			
Print Name	Signature	Date Relinquished	Time Relinquished
Delivered to Laboratory by:			
Print Name	Signature	Date Delivered	Time Delivered







Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P14

Standard Operating Procedures for the MS4 In-Stream  
Monitoring Program

VSMP Permit Number VA0088587  
9-30-2022



**Department of Public Works and Environmental Services**  
**POLICIES AND PROCEDURES**

Memorandum No.: SWPD16-06

**SUBJECT: Standard Operating Procedures for the MS4 In-Stream Monitoring Program**

Effective: 07/01/2016

Revised:

Approval: \_\_\_\_\_

**I. Purpose**

Fairfax County's (renewed) 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes provisions to evaluate the condition of select streams within the county by conducting in-stream monitoring. The applicable requirement of the permit (Part I, Section C.2) states:

*The permittee shall continue to implement an in-stream monitoring program to evaluate the condition of select streams within Fairfax County as follows:*

- *Five (5) stream sites within Fairfax County shall be selected for monitoring during the term of this permit.*
- *Monitoring shall be conducted once per two months between January 1<sup>st</sup> and December 31<sup>st</sup> at each monitoring location.*
- *Monitoring shall be performed for the following parameters:*
  - *pH*
  - *Dissolved Oxygen*
  - *Temperature*
  - *Total Suspended Solids*
  - *Ammonia as Nitrogen*
  - *Nitrate plus Nitrite Nitrogen*
  - *Total Kjeldahl Nitrogen*
  - *Total Nitrogen (calculated)*
  - *Dissolved Phosphorus*
  - *Total Phosphorus*
  - *Escherichia coli*
- *Monitoring for the parameters listed in Part I.C.2.c) shall be in accordance with Part II.A of this state permit.*
- *The permittee may replace a sampling location with a new proposed location after 15 samples are collected and analyzed. Written notification of the monitoring plan revisions shall be given to the Department in writing and shall include a statistical analysis of the monitoring results, conclusions regarding the data, the proposed new monitoring location, and the reasoning for site location choice.*

**SPECIFIC REPORTING REQUIREMENTS:**

- *The annual report due October 1, 2016 shall include the list of sites to be monitored during the term of the state permit and monitoring protocols.*
- *Beginning with the annual report due October 1, 2017, each annual report shall include a summary of the monitoring results and analyses and an interpretation of that data with respect to long-term patterns/trends.*



This In-Stream Monitoring Program Standard Operating Procedure (SOP) describes Fairfax County's site selection and sampling protocols for executing this program and provides a framework for compliance with the above MS4 permit requirements.

This document contains the following: -

- Site Selection Protocol -
- Field Protocol for In-Stream Monitoring -
- Documentation/Reporting Procedures -
- Appendices -

## **II. Site Selection for MS4 In-Stream Monitoring Program**

Since 2007, Fairfax County has been conducting an in-stream monitoring program in partnership with the United States Geological Survey (USGS). This program was designed by USGS and Fairfax County Stormwater Planning staff to accomplish the following objectives:

- Generate long-term monitoring data to describe:
  - Current water-quality (sediment and nutrients) and quantity conditions,
  - Trends in water-quality and quantity,
  - Nutrient and sediment loads and yields.
- Evaluate relationships between observed conditions/trends and best management practice (BMP) implementation throughout Fairfax County.
- Transfer the understanding gained from intensively monitored watersheds to less-intensively monitored ones.

In order to utilize an existing network to support the MS4 Permit requirements, Fairfax County will supplement this study with all required parameters and adhere to the monitoring frequency as stated in the MS4 Permit. The dataset already collected will provide significant value in satisfying the permit in regard to data interpretation with respect to long-term patterns and trends. If this long-term study with USGS would cease due to some unforeseen reason, the sites chosen for MS4 monitoring would continue to be monitored by Fairfax County to ensure consistency.

### **A. Site Selection Protocol**

For the MS4 Permit, Fairfax County has chosen the five most intensely monitored sites within the existing partnership study with USGS. The site selection was based on available watershed characterization data, the presence of a (Board of Supervisors-adopted) watershed management plan, the timetable for BMP implementation, and local knowledge of the watersheds. In general, an effort was made to limit the size of basins to 6 mi<sup>2</sup> or smaller to ensure that changes in the basins were detectable. Watershed characterization data from the Fairfax County watershed management plans along with other available datasets were used to classify and evaluate all potential monitoring basins. Ultimately, the primary factors used in the analysis and site selection process were:

- Land Use (10 land use types)
- Presence of water quality and/or quantity controls (and % area served by controls within each basin) -
- Existing Index of Biotic Integrity (IBI) scores -
- Percent impervious cover in each basin -
- Average basin slope -

- Planned stormwater BMP implementation

The goal is to ensure that the monitoring network effectively characterizes the range of watershed conditions within Fairfax County. In order to accomplish this, a cluster analysis was performed (using SPLUS) to group the basins into similar types and to select representative sampling sites from the resultant clusters. Hierarchical clustering was performed, and the complete linkage approach was used for joining clusters because little was known about the variance and sample size for each cluster. Land use was shown to be the most influential factor in the cluster analysis. Table 1 displays the name and watershed characterization for each selected site.

**Table 1: Site Name and Characterization for Fairfax County In-Stream Monitoring Program.**

Site Name	Watershed	Drainage Area (mi <sup>2</sup> )	% Impervious
Dead Run	Dead Run	2.09	30.97
Difficult Run	Difficult Run	5.47	27.61
Flatlick Branch	Cub Run	4.26	28.60
Long Branch	Accotink	3.79	25.66
South Fork Little Difficult Run	Difficult Run	2.71	14.02

A map of the five in-stream monitoring sites, along with site-specific maps of each location, can be found in Appendix A.

### III. Field Protocol for MS4 In-Stream Monitoring Program

This section provides details of the protocols to be followed during in-stream monitoring events and includes descriptions of safety procedures, sampling frequency, proper sampling equipment, and sampling protocols.

#### A. Health and Safety

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. In general, the following safety protocol is followed to protect the field staff:

- Perform field work in teams of at least two. -
- Bring mobile phone and first aid kit on all field site visits. -
- Exercise caution when encountering any wildlife and hazardous plants.
- Take proper precautions (e.g. seek shelter,) during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.

Additional information on Health and Safety may be found in Appendix B, including information on field staff conduct, personal protective equipment, confined space entry, dangerous flora and fauna, unknown hazardous substances and wastes, bloodborne pathogens, remote areas, hand tool safety, weather-related hazards, and heat and cold stress.

## **B. Sampling Frequency**

As specified by the permit, monitoring shall be conducted once per two months between January 1<sup>st</sup> and December 31<sup>st</sup> at each monitoring location. In order to characterize the full range of possible water quality conditions, this sampling shall be a scheduled event to be conducted in dry or wet conditions, unless otherwise noted due to severe weather. It is imperative that County staff head out into the field as early as possible in order to deliver samples to lab in within the established holding times (See Table 2).

## **C. Field Work Preparation**

### **1. Equipment Checklist**

Before heading out into the field, staff should assemble the following equipment:

- Field Form
- Chain of Custody
- Weatherproof Labels for Bottles
- Coolers and ice for samples
- Sharpies/Pens
- Thermometer
- Multi-Parameter Water Quality Sonde
- Nitrile Gloves
- Paper Towels
- Clipboard

### **2. Water Quality Sonde Calibration**

Calibration of the water quality sonde must be completed prior to sample collection. Calibration procedures can be found in Appendix C and provide a step-by-step guide to ensure accuracy of the sonde. A few steps to follow prior to calibration:

- All buffers and standards should be at a similar temperature as the stream in order to ensure accurate calibrations. For winter months, this requires staff to either keep them on ice or place them in the refrigerator the night before.
- Check to make sure that the sonde has a charged battery - for backup, bring 4 'C' batteries in the field.

The sonde can be calibrated either in the office or from the back of the vehicle prior to leaving for the sampling run. Calibration readings should be entered on the back of the field form (Figure 1) for the first site – the site name should then be referenced on each subsequent field form instead of re-entering the calibration values. Values for all field form sections within this SOP are included for illustrative purposes as not all fields are used for this monitoring program. Blank field forms are generated for each new sampling run as the routes are randomized in consultation with USGS.

**Figure 1: Calibration Entry**

Multiparameter Meter			
Make/Model	YSI 6920		Serial Number <u>12E100825</u>
Calibrated at _____ (site name) today			
SC Calibration			
Std. Value	1000	250	50
Temp	12.83	12.91	13.05
Initial	998	250	50
Adjusted	1000	—	—
Lot #	1206469	1203394	1206479
Exp Date	12/13	9/13	6/13
In standard $\geq 167 \mu\text{S/cm}$ , calibrate if probe reads $\pm 3\%$ from expected value. In standard $< 167 \mu\text{S/cm}$ , calibrate if probe reads $\pm 5 \mu\text{S/cm}$ from expected value.			
Turbidity Calibration			
Std. Value	0	100	—
Temp	11.37	10.95	
Initial	0.4	98.3	
Adjusted	0.0	100.0	
Lot #	DIW	82180	
Exp Date	—	6/14	
In standard $\geq 40 \text{ NTU}$ , calibrate if probe reads $\pm 5\%$ from expected value. In standard $< 40 \text{ NTU}$ , calibrate if probe reads $\pm 2 \text{ NTU}$ from expected value.			
pH Calibration			
	pH 7	pH 10	pH 4
Theo. pH	7.05	10.14	4.00
Temp	12.24	12.18	12.27
Initial	7.04	10.12	3.97
Adjusted	7.05	10.14	3.99
Lot #	2206313	2207301	2207139
Exp Date	6/14	1/14	6/14
Calibrate if probe reads $\pm 0.1$ units from expected value.			
DO Calibration			
Temp. <u>11.38</u>		BP <u>754</u>	
	Initial	Adjusted	
DO %	97.7	99.1	
DO mg/L	10.68	10.85	
DO charge			
Chart DO	10.7		
Changed Membrane? YES NO Value in zero D.O. sol'n: <u>0.20</u>			
Calibrate if probe reads $\pm 0.3 \text{ mg/L}$ from expected value.			

**D. Sample Collection**

This section will describe the steps to be completed and the areas of the form to be filled out. Please see Appendix D for a copy of the field form.

**1. Field Measurements**

Some basic tips for using the water quality sonde in field monitoring:

- The unit should be on for about 10 minutes before readings are taken.
- Place the sonde guard on the unit to protect the probes during readings.
- Ensure the probes are fully immersed in flowing water upstream of any other collection activity.

- Allow the readings to stabilize before taking a reading, especially in winter months.
- Always write out measurements to the full precision of the instrument.

Figure 2 shows how to fill out the field measurements on the form. Gage height readings (as seen on form) are not necessary for the collection of these measurements.

**Figure 2: Field Measurements**

FIELD MEASUREMENTS			GAGE HEIGHT READINGS:	
GAGE HT (00065) <u>24.26</u> ft	COND (00095) <u>154</u> $\mu\text{S/cm@25 } ^\circ\text{C}$		_____ @ _____	
DIS. OXYGEN (00300) <u>8.15</u> mg/L	TEMP, AIR (00020) <u>15</u> $^\circ\text{C}$		_____ @ _____	
BAROMETRIC PRES. (00025) <u>765.7</u> mm Hg	TEMP, WATER (00010) <u>12.95</u> $^\circ\text{C}$		SOURCE: STAFF PLATE REFERENCE MARK	
TURBIDITY (63680) <u>5.5</u> FNU	pH (00400) <u>7.07</u> UNITS		REF. MK. ELEVATION: _____	
			DISTANCE TO WATER: _____	
			GAGE HEIGHT: = _____	

## 2. Sampling Information

Located just below the field measurements is a section to describe the environment being sampled. Ideally, all samples should be taken in the center of the stream along a riffle or other flowing water. This information, along with water and weather conditions should be transcribed in the sampling information section. Figure 3 is an example of how to fill out this section.

**Figure 3: Sampling Information**

SAMPLING INFORMATION	
Sampler Type (64164) <u>3070</u>	Sampler ID <u>GRAB</u>
Sampler Bottle/Bag Material: <u>PLASTIC</u> TEFLON OTHER _____	Nozzle Material: PLASTIC TEFLON OTHER _____ Nozzle Size: 3/16" 1/4" 5/16"
Stream Width: _____ ft mi Left Bank _____ Right Bank _____ Mean Depth: _____ ft Ice Cover _____ % Ave. Ice Thickness _____ in.	
Sampling Points: <u>Centroid</u>	
Sampling Location: <u>WADING</u> BRIDGE <u>UPSTREAM</u> DOWNSTREAM SIDE OF BRIDGE <u>100</u> ft mi above below at <u>gage</u>	
Sampling Site: POOL <u>RIFFLE</u> OPEN CHANNEL BRAIDED BACKWATER Bottom: BEDROCK ROCK COBBLE GRAVEL <u>SAND</u> SILT CONCRETE OTHER _____	
Stream Color: BROWN GREEN BLUE GRAY <u>CLEAR</u> OTHER _____	Stream Mixing: <u>WELL-MIXED</u> STRATIFIED POORLY-MIXED UNKNOWN OTHER _____
Weather: SKY- CLEAR PARTLY-CLOUDY <u>CLOUDY</u> PRECIP- LIGHT MEDIUM HEAVY SNOW RAIN MIST WIND <u>CALM</u> LIGHT BREEZE GUSTY WINDY EST. WIND SPEED _____	
TEMP- VERY COLD <u>COOL</u> WARM HOT Stage: <u>STABLE, NORMAL</u> STABLE, HIGH RISING FALLING PEAK	

## 3. Grab Samples

Three grab samples are to be collected at each site. All grab sample labels should include the following information:

- Sample Date
- Sample Time
- Sample Location
- Sample Collector

All samples should be taken in a reach with well mixed, flowing water. Be sure that grab samples are taken downstream of water quality measurements to ensure accuracy. Be aware of any disturbed sediments from sonde placement and avoid collection of this water. For nutrient samples, rinse bottle with sample water three times before filling. Sediment and E. coli bottles should not be rinsed prior to collection.

The nutrient, bacteria and sediment samples should be given the same time. *Always round the sample time to the nearest 15 minute increment - XX:00, XX:15, XX:30, XX:45.* For a regular field sample, staff must fill out both the time and the sample type on the field form. For a regular sample, the sample type is ‘9’. As noted on the field form, if a replicate sample is collected, staff must label both the regular and replicate ‘7’. The sample times should be noted 15 minutes apart, even if they are taken concurrently. Figures 4 and illustrates both examples below.

**Figure 4: Regular Sample Time and Type**

Time: Label Fairfax replicates 15 minutes past regular samples and blanks 5 minutes before regular samples. Sample Type: A regular sample is Sample Type 9. If a replicate is collected, label both regular and replicate 7. If a blank is collected, label the blank Sample Type 2 and the regular sample Sample Type 9.					
Sample Type	Time	Medium	Sample Type	Dupl. Type 99105	
Regular	1000	WS	9		
Replicate		WSQ	7	30 (split)	

**Figure 5: Replicate Sample Time and Type**

Time: Label Fairfax replicates 15 minutes past regular samples and blanks 5 minutes before regular samples. Sample Type: A regular sample is Sample Type 9. If a replicate is collected, label both regular and replicate 7. If a blank is collected, label the blank Sample Type 2 and the regular sample Sample Type 9.					
Sample Type	Time	Medium	Sample Type	Dupl. Type 99105	
Regular	1215	WS	7		
Replicate	1230	WSQ	7	30 (split)	

All nutrient and bacteria samples should be stored in a cooler with wet ice. Sediment bottles can be stored without ice. As an additional precaution, be sure that



the bottles remain upright in the cooler, as it is possible that the lids are not completely sealed.

#### 4. Sample Drop-off

Once all sites in the sampling route have been completed, staff will immediately transport samples to the Fairfax County Environmental Monitoring Laboratory at the Noman M. Cole, Jr., Pollution Control Plant. This lab is certified under the Virginia Environmental Laboratory Accreditation Program (VELAP). The samples will then be processed according to the analyte suite listed in Table 2 within the applicable holding times.

#### 5. Analytes

Per the permit requirements, parameters to be tested are sediment, bacteria and a suite of nutrients. These parameters will provide information about suspended material transport, the presence of pathogenic material, and deposition and mobilization of nutrients commonly used in detergents and fertilizers. The analyte suite is shown below in Table 2.

**Table 2: Field and Laboratory Analytes with Method Detection and Reporting Limits for Fairfax County In-Stream Monitoring Program.**

Parameter	Method Detection Limit	Reporting Limits	Method	Holding Time
pH	NA	NA	Field Measurement	Analyze at collection
Dissolved Oxygen	NA	NA	Field Measurement	Analyze at collection
Temperature	NA	NA	Field Measurement	Analyze at collection
Total Suspended Solids	0.1 mg/L	1.0 mg/L	SM 22 <sup>nd</sup> Ed 2540 D	7 Days
Ammonia as Nitrogen	0.047 mg/L	0.1 mg/L	EPA 350.1	28 Days
Nitrate plus Nitrite Nitrogen	0.026 mg/L	0.1 mg/L	EPA 353.2	28 Days
Total Kjeldahl Nitrogen	0.056 mg/L	0.2 mg/L	EPA 351.2	28 Days
Total Nitrogen	NA	NA	Calculated	NA
Dissolved Phosphorus	0.0080 mg/L	0.03 mg/L	SM 22 <sup>nd</sup> Ed. 4500 P-E	28 Days
Total Phosphorus	0.0080 mg/L	0.03 mg/L	SM 22 <sup>nd</sup> Ed. 4500 P-E	28 Days
Escherichia coli	<1 MPN/100 mL	1 MPN/100 mL	Colilert MPN	8 Hours

### IV. Documentation/Reporting Procedures

#### A. Documentation of Field Monitoring

For sample events, a dedicated field form (Appendix D) is used to document the following information:

- Site Name

- Sample Date -
- Sample Time -
- Field crew -
- Stream Condition -
- Field Measurements -

## **B. Chain of Custody**

Chain of custody (COC) forms, used for all samples, are a permanent record of transfer of sample custody. Custom COC forms for this project are preprinted with the site names and sample date. Field staff need only to complete the sample time during collection and indicate laboratory delivery date and time during drop-off of samples. Chain of custody should also be signed by receiving laboratory once samples are delivered. Field staff should make a copy of signed chain of custody and retain for their records.

## **V. In-Stream Monitoring Reports**

For the In-Stream Monitoring Program, Fairfax County will produce an annual report that shall include a summary of the monitoring results and analyses for the five selected sites. Along with this information, an interpretation of the data with respect to long-term patterns and trends will be initiated and built upon with each additional year of data.

### **A. Monitoring Yearly Report**

At the end of each MS4 reporting year (July 1 – June 30), a report on in-stream monitoring is prepared for use in the development of the County’s annual MS4 report to VA DEQ. The yearly report includes the following:

- The list of locations where in-stream monitoring was conducted
- Sample date for each collection
- A compilation of analytical results for each site

Year 2 through Year 5 reports will include comparisons to prior years monitoring efforts and results. The Year 5 report will also include an overall summary of the five years of monitoring with respect to any developing patterns or trends discerned in the data.

## **VI. Administrator of the SOP**

This SOP document is administered by the Stream Monitoring Section within the Stormwater Planning Division. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

## **VII. Appendices**

### **A. Fairfax County MS4 In-Stream Monitoring Locations**

### **B. Health and Safety Guidance for In-Stream Monitoring Field Work**

### **C. Calibration Procedures for Water Quality Field Instruments**

### **D. In-Stream Monitoring Field Form**

# Appendix A: Fairfax County MS4 In-Stream Monitoring Locations

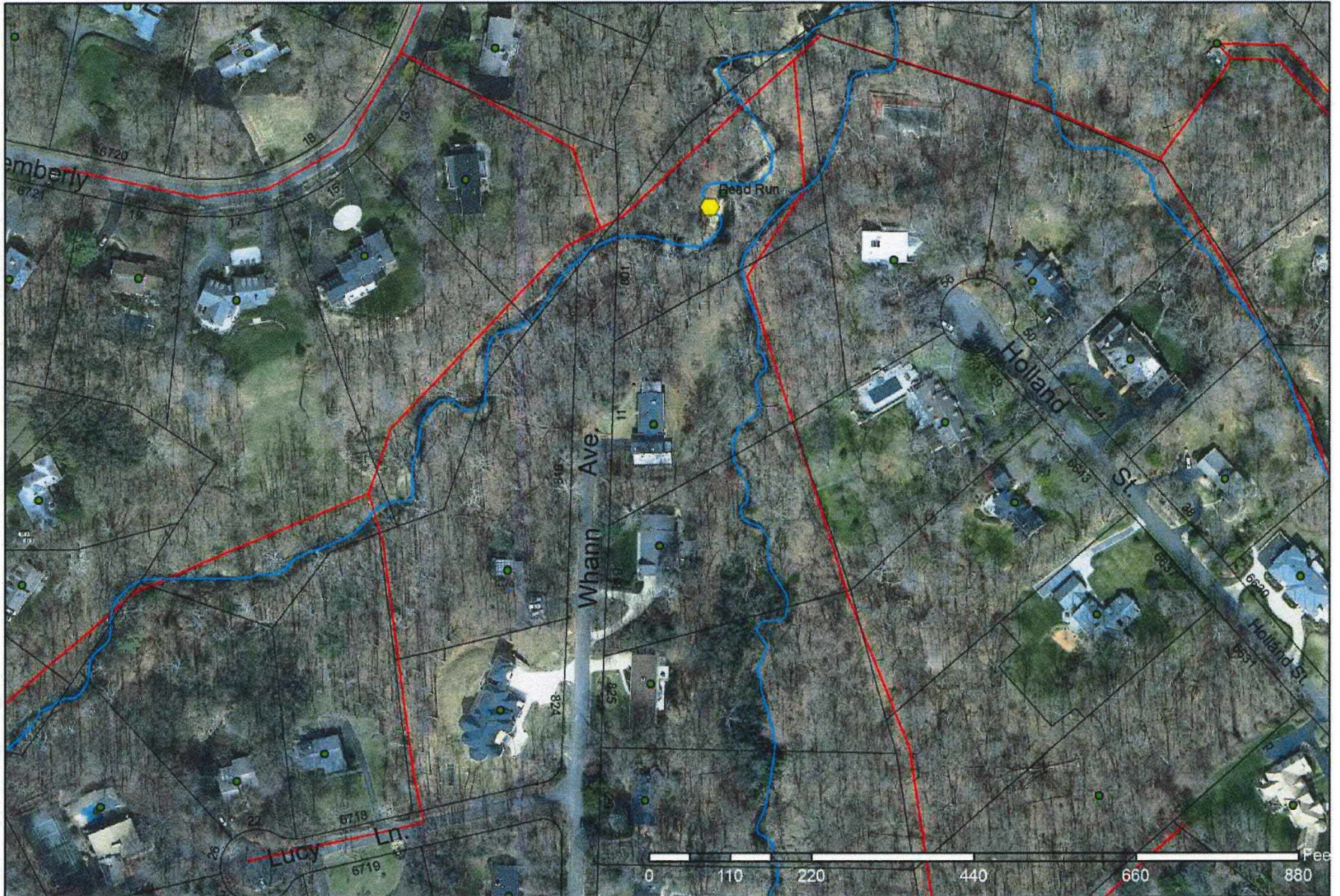
## Fairfax County MS4 In-Stream Monitoring Locations







# Dead Run USGS Sites Tax Map 21-2







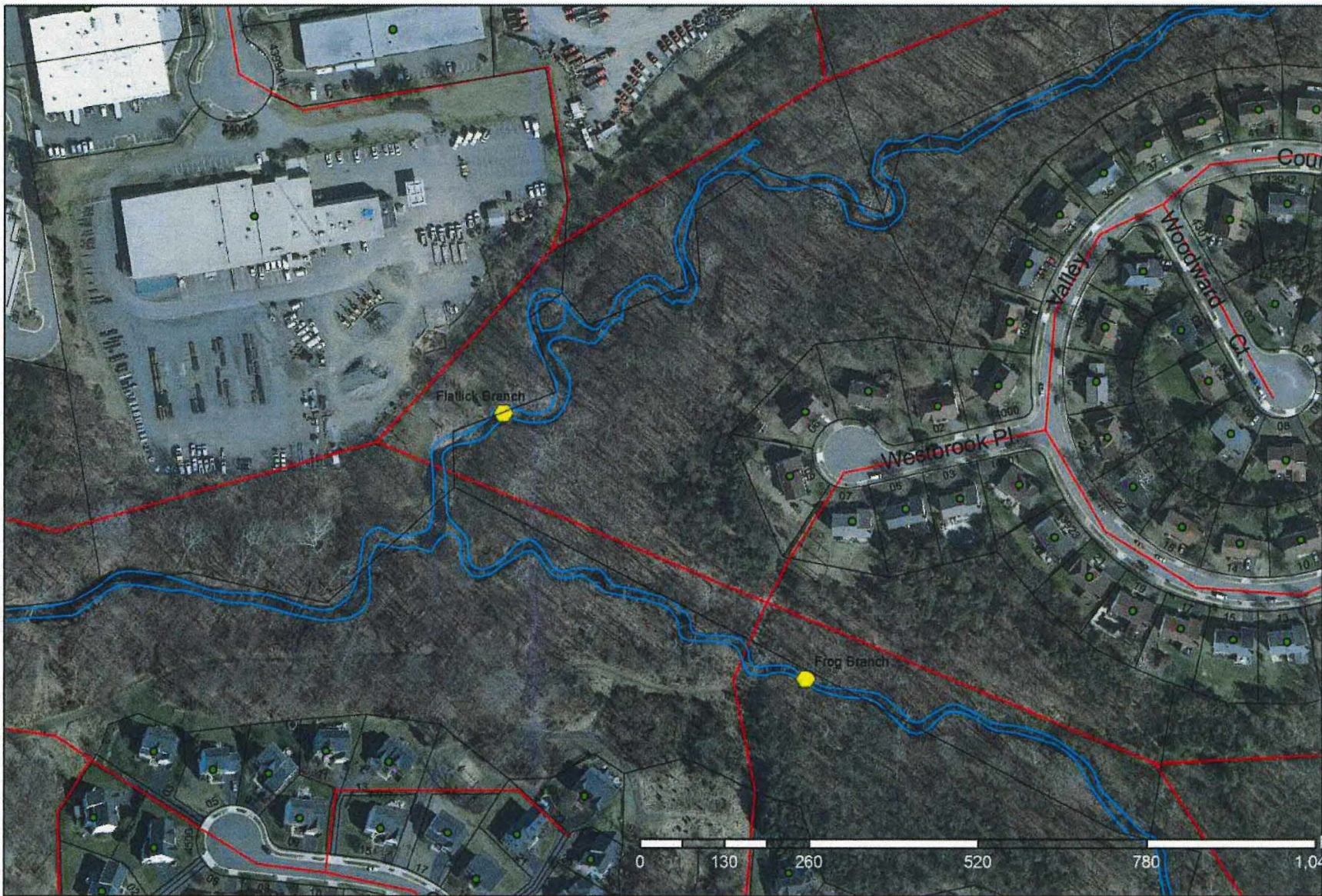
# Difficult Run USGS Sites Tax Map 47-1







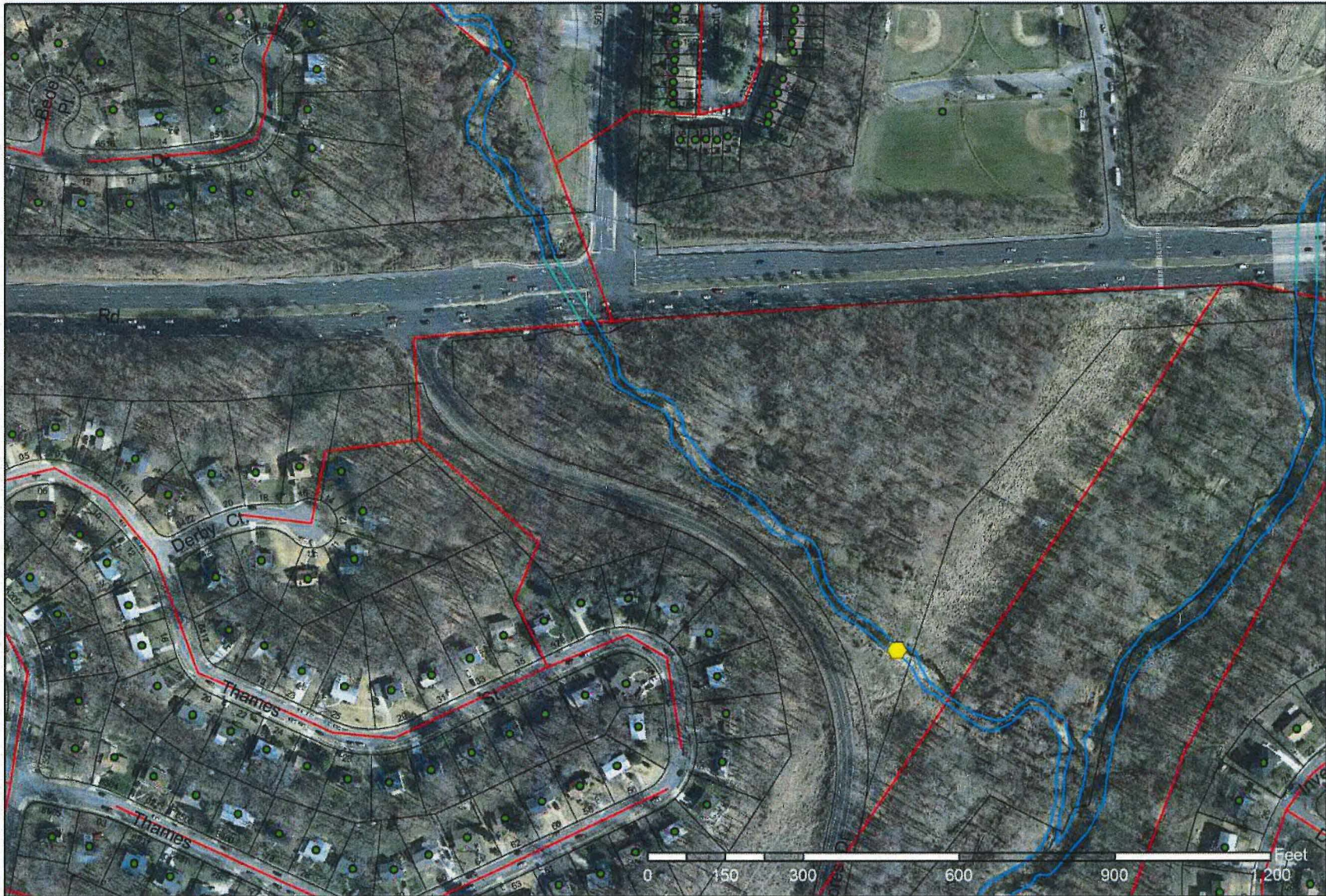
# Flatlick and Frog Branches (Cub Run) USGS Sites Tax Map 44-2







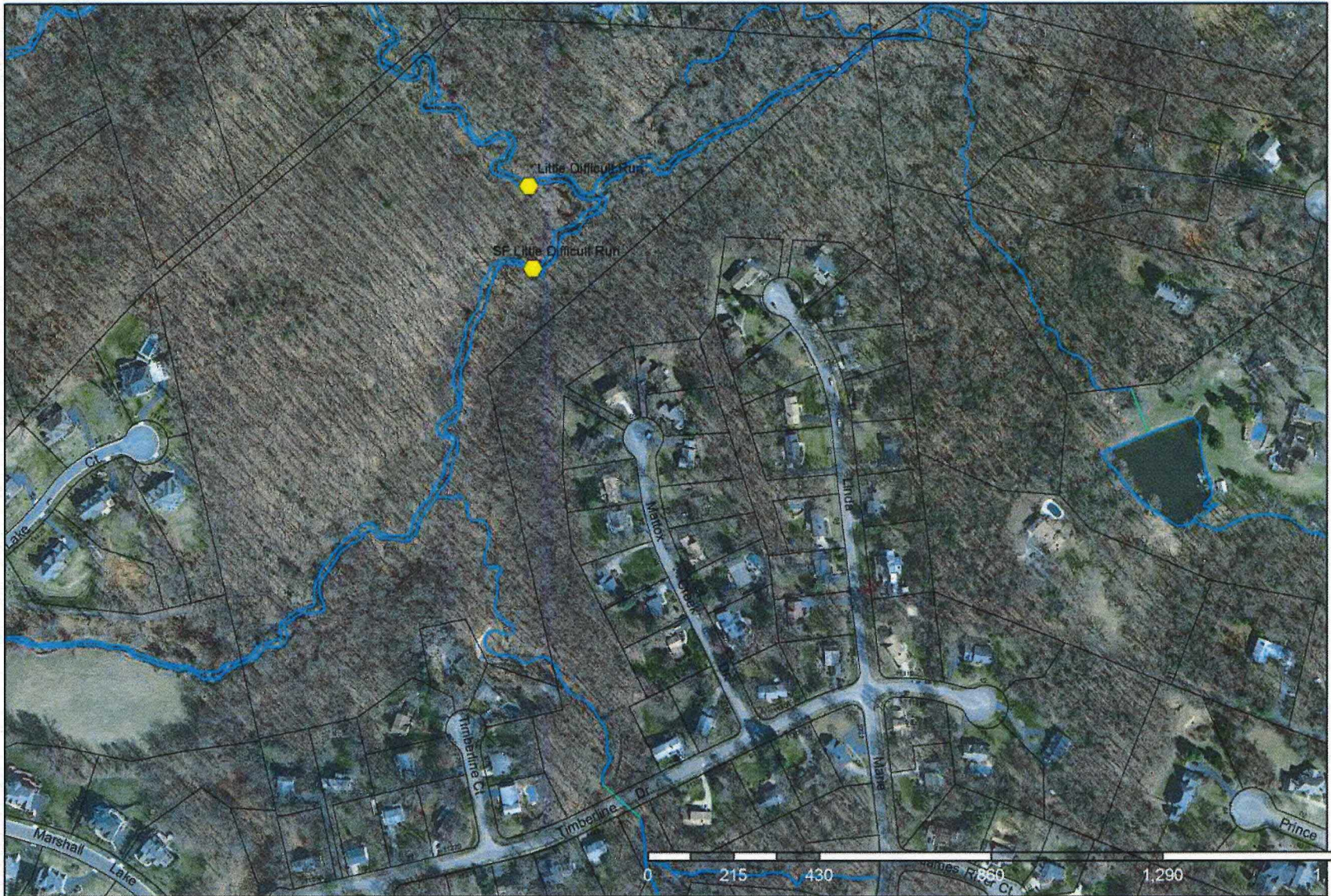
# Long Branch (Accotink Creek) USGS Site Tax Map 70-3







# N. & S. Fork Little Difficult Run USGS Sites Tax Map 36-2





## **Appendix B: Health and Safety Guidance for In-Stream Monitoring Field Work**

### **General**

Health and safety responsibility and accountability involves every employee. The collective effort of all employees in providing a healthy and safe work environment will minimize or eliminate the potential for accidents. In general, field sampling will require the following safety protocol to protect the field staff:

1. - Perform field work in teams of at least two.
2. - Bring cell phone and first aid kit on all field site visits.
3. - Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
4. - Take proper precautions (e.g. seek shelter) during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
5. - Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

### **Conduct**

All field staff are expected to:

- Understand and comply with health and safety policies. Each employee is not only responsible and accountable for his/her own actions, but for those others around him/her.
- All employees shall show professional courtesy to fellow employees, clients, subcontractors, regulators, and visitors.
- Understand and follow good health and safety practices.
- Horseplay, practical joking, inattention to work or other inappropriate accident-causing behavior will not be tolerated.
- Smoking, eating, drinking and chewing shall be conducted only in designated areas.
- Use of alcohol or controlled substances is prohibited.
- While traveling to and from the job site, employees shall: obey all federal, state and local regulations regarding seat belt use, all traffic laws, and any other laws regarding proper conduct in public areas.

### **Personal protective equipment (PPE)**

Engineering and administrative controls will be used as the primary means of exposure control, as required by OSHA standards. However, PPE may also be necessary to further minimize potential employee exposure. All employees shall dress appropriately for the tasks to be performed. Specialized health and safety equipment, including personal protective equipment, monitoring equipment, and other devices designed to protect the employee shall be issued to the employee on an as-needed basis.

Employees performing field activities and certain laboratory functions have the potential of coming in contact with hazardous materials. Many of these hazardous materials can cause significant injury or illness through acute or chronic exposures. For field work (including industrial operations), all field employees are required to wear the following basic PPE:

- Appropriate work clothing
- ANSI-approved steel-toed, steel-shank boots
- ANSI-approved safety glasses
- ANSI-approved hard hat (when overhead hazards exist)
- Hearing Protection (when appropriate)
- Rain Gear (when appropriate)

### **Confined space entry program**

A confined space is any location not intended for human occupation, has limited or no ventilation, has the potential for containing dangerous or lethal atmospheres, and has limited ingress/egress. OSHA has addressed confined space entry requirements and procedures in 29 CFR 1910.146 (Permit Required Confined Spaces) and 1926.651 (Excavations). Confined space entry, if necessary, will be performed in accordance with OSHA confined space entry procedures, industry-standard practices, and will be performed by confined space trained personnel.

The Team Leader will provide ongoing, real time ambient air monitoring of the locations to be sampled to determine the need for personal protection. Entry of the sampling personnel will be allowed if the following criteria are met:

- Oxygen level greater than 19.5%. Atmospheres with oxygen concentrations less than 19.5% are considered oxygen deficient and must be treated as Immediately Dangerous to Life and Health (IDLH) atmospheres.
- Lower explosive limit (LEL) reading is less than 3%

### **Dangerous flora and fauna**

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); rabid mammals; and poisonous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction.

### **Unknown hazardous substances and wastes**

The nature of environmental consulting often times requires the investigation of hazardous substances or wastes whose identity is not known. Because of the serious personal and environmental consequences of unintentional release of chemicals, very specific health and safety procedures must be implemented to monitor ambient conditions, mitigate releases to the environment, and protect workers from exposure. Most of these procedures dovetail with site investigation, sampling, and remediation techniques outlined by EPA policy and should be included in the project comprehensive work plan.

### **Bloodborne pathogens**

Exposure to bloodborne pathogens (BBP) is possible in the case of certain emergency situations. Personnel may be exposed to body fluids such as blood, saliva, vomit, mucus or others. These fluids could contain pathogens that have the potential for causing disease in humans. Should personnel be required to administer lifesaving procedures, such as CPR, the following procedures will be followed to minimize the potential for exposure:

1. - Wear disposable gloves when hand contact with blood, mucus membranes, non-intact skin or other potentially infectious materials could be involved;
2. - Use disposable mouthpieces, pocket masks or other ventilation devices for administering artificial ventilation;
3. - Wash hands with soap and water after administering first aid;
4. - In the case of eye contact, flush eyes using an eye wash for at least 15 minutes;
5. - Remove garments contacted by blood or other body fluids as soon as possible;
6. - Do not eat, drink, smoke or handle contact lenses in areas with possible BBP exposure; and
7. - Persons cleaning up an accident scene should not pick up broken glass or other sharp objects by hand. All clothes and other items at the first aid scene should be safely secured prior to leaving.

Employees who may have been exposed to BBPs should report the incident at once.

### **Remote areas**

The sampling team may be located in areas not readily accessible by vehicle. Radio communication will be maintained from the sampling team to a base station in the event of an emergency.

### **Heavy lifting**

It may be necessary to carry sampling equipment (e.g., coolers, sampling containers, and equipment) during the course of the field activities. Care must be taken to avoid injury while carrying equipment to the sampling locations.

### **Hand tools**

Some of the field activities and sampling procedures may require the use of hand tools with sharp edges including machetes, scissors, clippers, knives, and razor blades. Care must be taken during their use to prevent injuries from cuts.

### **Weather related hazards**

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of site personnel.

### **Heat stress**

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a

prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps. The signs and symptoms of heat cramps include:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes shade, rest, and fluid replacement. The individual will drink electrolyte-replacement fluids (e.g., Gatorade, Squencher, 10-K), which will be made available to field personnel. If the individual has not recovered within ½ hour, then he/she will be transported to the hospital for medical attention.

Heat exhaustion usually occurs in a healthy individual who has been exposed to excessive heat while working or exercising. Blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion include:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin, with heavy perspiration;
- Skin appears pale;
- Fatigue, weakness, and/or dizziness; and
- Elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids. If the individual has not recovered within ½ hour, he/she will be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat, and their body systems become overwhelmed by heat and begin to stop functioning. This condition is a medical emergency, requiring the immediate cooling of the victim and transport to the hospital immediately. The signs and symptoms of heat stroke include:

- Victim has stopped sweating;
- Dry, hot, red skin;
- Body temperature approaching or above 105° F;
- Dilated (large) pupils; and
- Loss of consciousness; victim may lapse into a coma.

Local weather conditions may produce an environment which will require restricted work schedules in order to protect employees. The Field Team Leader will observe workers for any potential symptoms of heat stress. Adaptation of work schedules and training in recognition of heat stress conditions will help prevent heat-related illnesses from occurring.

### **Cold stress**

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of



the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. The three categories of local cooling include:

- Frost nip - characterized by a blanching or whitening of the skin;
- Frost bite - skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient; and
- Freezing - skin tissue is cold, pale, and solid.

Frost nip and frost bite first aid includes covering the affected area with warmth and retreating to a warm area. Frozen tissue is a medical emergency, and the victim will be transported to the hospital immediately.

General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. The signs and symptoms of mild hypothermia include:

- Shivering; -
- Numbness; and -
- Drowsiness. -

First aid for mild hypothermia includes using heat to raise the individual's body temperature. Heat may be applied to the victim in the form of heat packs, hot water bottles, and blankets.

The signs and symptoms of severe hypothermia include:

- Unconsciousness; -
- Slowed respiration or respiratory arrest; -
- Slowed pulse or cardiac arrest; -
- Irrational or stuporous state; and -
- Muscular rigidity. -

First aid for severe hypothermia includes handling the victim very gently; rough handling may set off an irregular heartbeat. Do not attempt to re-warm the severely hypothermic victim; re-warming may cause the development of an irregular heartbeat. Severe hypothermia is a medical emergency, and the victim will be transported to the hospital immediately.

Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

## Appendix C: Calibration Procedures for Water Quality Field Instruments

The following is the typical order in which field staff should calibrate a sonde in preparation for a day of water quality sampling. The order in which individual probes are calibrated is not important, but we recommend calibrating the SC probe before the pH probe – pH standards have a very high specific conductance (an order of magnitude higher than SC standard), and any standard accidentally left in the calibration cup could throw off the SC calibration.

Try to keep your standards within 5 °C of expected stream temperatures to ensure accurate calibrations. This may require putting the standards in the vehicle the day before calibrating to cool them overnight or placing the standards in a refrigerator overnight. Do not allow standards to freeze. It is recommended to bring standards into the field in order to recalibrate the field meter should some issue arise while away from the office.

### Dissolved Oxygen

Make sure the instrument is turned on and the sonde is running. To calibrate DO% in water saturated air, pour a small amount of water (1/8 inch) in the plastic storage cup. Make sure there are no water droplets on the DO membrane or temperature sensor. Then install the storage sleeve over the sensor. Screw it on to the cable and then disengage one or two threads to ensure atmospheric venting. Wait approximately 5 – 15 minutes to allow the chamber to equilibrate and become completely saturated.

Go through the calibration steps from the main menu screen. **Be sure to calibrate only to one point at 100% saturation.** Return to the sonde run screen.

### Specific Conductivity

Remove the black cap from the cal cup and pour a small amount of 1000  $\mu\text{S}/\text{cm}$  standard onto the SC probe (the probe with 2 open holes and the metal thermistor protruding from the plastic probe body). Cap the cup and shake vigorously to cover all interior surfaces with standard. Discard this standard and repeat twice more (a “triple rinse”). Then, pour in enough standard to submerge the SC probe and replace the black cap. Record this SC value along with the standard temperature, standard lot number, and standard expiration date. (Also record the lot numbers and expiration dates of the other SC standards used). If the reading is  $\pm 3\%$  from the expected value, the probe needs to be calibrated. It is recommended to calibrate if the sonde is reading  $\pm 1.5\%$  from the expected value. **The specific conductivity probe is only ever calibrated to 1000  $\mu\text{S}/\text{cm}$ ,** and any readings in other standards are just to confirm that the calibration was a valid calibration. Record the temperature and SC after the probe is calibrated. Return to the sonde run screen.

Triple rinse in 250  $\mu\text{S}/\text{cm}$  standard, then record the reading in the same standard. Repeat for 50  $\mu\text{S}/\text{cm}$  standard. The reading in 250  $\mu\text{S}/\text{cm}$  standard should be within 3%, and the reading in 50  $\mu\text{S}/\text{cm}$  should be within 5  $\mu\text{S}/\text{cm}$ .

If either of these is off, go back and calibrate in 1000  $\mu\text{S}/\text{cm}$  standard (if not already done) and repeat the checks in 250 and 50  $\mu\text{S}/\text{cm}$  standard. If the values continue to be off, try to troubleshoot the probe – clean the probe ports with an SC probe brush, rinse with DIW before using the SC standard, or open fresh bottles of standard.

In winter months, follow all of this up with a check reading in 10,000  $\mu\text{S}/\text{cm}$  standard to make sure the SC probe is operating well in the high SC range.

## pH

Triple rinse with pH 7 standard and record the standard temperature as well as a reading from the pH probe. Take this opportunity to write down hypothetical pH values for the 7, 10, and 4 pH standards, all lot numbers, and all expiration dates of the standards. You may need to let the pH probe equilibrate for a few minutes if the standards are cold before recording the first reading. It is recommended that the pH probe is calibrated every time it is used, and the manufacturer recommends that the probe be calibrated if it gives readings  $\pm 0.2$  units from the hypothetical pH value.

To calibrate, follow the steps for a three point pH calibration from the main menu. Triple rinse with each standard before actually calibrating, and enter the hypothetical pH values as the values to which the probe should be calibrated. **Always start by calibrating to pH 7**, then calibrate to pH 10 and pH 4 (the order of these two standards is not important). Be sure to record the reading after the probe is actually calibrated. Once fully calibrated, return to the sonde run screen.

Your water quality field instrument is ready for use in the field.

## Appendix D: Field Form for In-Stream Monitoring

STATION NO: 01645704	SAMPLE DATE: 9/21/2012	PURPOSE OF SITE VISIT (50280): 1001
STATION NAME: Difficult Run Above Fox Lake Nr Fairfax, VA	MEAN SAMPLE TIME (CLOCK): 1045	TIME DATUM: EST EDT
PROJECT NO.: GC13LM009RO3500	PROJECT NAME: FAIRFAX MONITORING	HYDRO EVENT: 9 HYDRO COND: 9
SAMPLING TEAM: JKMcCulla, JDJastram	TEAM LEAD SIGNATURE: James Ulla	DATE: 9/22/2012

**Time:** Label Fairfax replicates 15 minutes past regular samples and blanks 5 minutes before regular samples.  
**Sample Type:** A regular sample is Sample Type 9. If a replicate is collected, label both regular and replicate 7. If a blank is collected, label the blank Sample Type 2 and the regular sample Sample Type 9.

Analysis Source: 5  
 Collecting Agency: USGSVAWC

Sample Type	Time	Medium	Sample Type	Dupl. Type 99105
Regular	1045	WS	9	
Replicate		WSQ	7	30 (split)
Lab Split		WSQ	7	200 (lab-split)
Blank		OAQ	2	
Reference		OAQ	6	
Other				

**SAMPLES COLLECTED**

SUSP. SED. X  
 NUTRIENTS X  
 OTHER: \_\_\_\_\_

**FIELD MEASUREMENTS**

GAGE HT (00065): <u>0.84</u> ft	COND (00095): <u>164</u> µS/cm @ 25 °C	GAGE HEIGHT READINGS: <u>0.84</u> @ <u>1058</u>
DIS. OXYGEN (00300): <u>8.26</u> mg/L	TEMP, AIR (00020): <u>19.5</u> °C	_____ @ _____
BAROMETRIC PRES. (00025): <u>756</u> mm Hg	TEMP, WATER (00010): <u>16.28</u> °C	SOURCE: <u>STAFF PLATE</u>
TURBIDITY (63680): <u>2.0</u> FNU	pH (00400): <u>7.09</u> UNITS	OTHER: _____ (REASON: _____)

**SAMPLING INFORMATION**

Sampler Type (84164): 3070      Sampler ID: GRAB

Sampler Bottle/Bag Material: PLASTIC TEFLON OTHER \_\_\_\_\_      Nozzle Material: PLASTIC TEFLON OTHER \_\_\_\_\_      Nozzle Size: 3/16" 1/4" 5/16"

Stream Width: \_\_\_\_\_ ft    Left Bank \_\_\_\_\_    Right Bank \_\_\_\_\_    Mean Depth: \_\_\_\_\_ ft    Ice Cover \_\_\_\_\_ %    Ave. Ice Thickness \_\_\_\_\_ in.

Sampling Points: CENTROID SAMPLE    THREE FIVE    EQUIDISTANT STATIONS    Standard: \_\_\_\_\_

Sampling Location: WADDS BRIDGE    UPSTREAM    DOWNSTREAM SIDE OF BRIDGE    40 mi above below at gage \_\_\_\_\_

Sampling Site: POOL REFLE OPEN CHANNEL GRAINED BACKWATER    Bottom: BEDROCK ROCK CORBLE GRAVEL SAND SILT CONCRETE OTHER \_\_\_\_\_

Stream Color: BROWN GREEN BLUE GRAY CLEAR OTHER \_\_\_\_\_      Stream Mixing: WELL MIXED STRATIFIED POORLY MIXED UNKNOWN OTHER \_\_\_\_\_

Weather: SKY: CLEAR PARTLY CLOUDY CLOUDY    PRECIP: LIGHT MEDIUM HEAVY SNOW RAIN MIST WIND: CALM LIGHT BREEZE GUSTY WINDY EST. WIND SPEED \_\_\_\_\_

TEMP: VERY COLD COOL WARM HOT      Stage: STABLE, NORMAL STABLE HIGH RISING FALLING PEAK

Sampling Method (82398): EWI [10] GRAB [70] SINGLE VERTICAL [30] MULT VERTICAL [40]

COMPILED BY: \_\_\_\_\_      CHECKED BY: \_\_\_\_\_      DATE: \_\_\_\_\_

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix P15

Floatables Monitoring Standard Operating Procedures

VSMP Permit Number VA0088587  
9-30-2022





Department of Public Works and Environmental Services  
**POLICIES AND PROCEDURES**

Memorandum No.: SWPD17-01

**SUBJECT: Standard Operating Procedures for the MS4 Floatables Monitoring Program**

**Effective:** 3/30/2017 **Revised:** 11/14/2019

Approval:

Clean Fairfax Council Approval:

Handwritten signatures in black ink, including one that appears to be "J. Cole".

## **I. Purpose**

Under the MS4 permit, Fairfax County is required to develop and implement a floatables monitoring program to determine the loading of floatables from the MS4 to streams within Fairfax County. This SOP describes Fairfax County's program for floatables monitoring.

Fairfax County's (renewed) 2015 Virginia Stormwater Management Program (VSMP) Municipal Separate Storm Sewer System (MS4) permit includes the following provisions for floatables monitoring (Part I, Section C.3):

*No later than 24 months after the effective date of the permit, the permittee shall develop and implement a floatables monitoring program. The intent of the monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The permittee will implement the floatables monitoring program as follows:*

- a. Monitoring shall be conducted at five (5) monitoring sites located at MS4 outfalls and/or streams receiving discharges from the MS4.*
- b. Monitoring shall be conducted once per quarter after program implementation.*
- c. The monitoring program shall include the count of floatables visually observed and length or area of sites assessed.*

### **SPECIFIC REPORTING REQUIREMENTS:**

- *The annual report due October 1, 2016 shall include an update on the development of the floatables monitoring program.*
- *The annual report due October 1, 2017 shall include the monitoring protocols for the floatables monitoring program.*
- *Beginning with the annual report due October 1, 2018, each following annual report shall include a list of sites monitored, a summary of the monitoring protocols used, and a summary of the monitoring results and analyses.*

This Floatables Monitoring Program Standard Operating Procedure (SOP) describes Fairfax County's site selection, field reconnaissance, and floatables monitoring protocols for evaluating the loading of floatables from the County's MS4 and provides a framework for full compliance with the above MS4 permit requirements. This SOP may be modified over time as additional data are gathered or as the needs of Fairfax County's program change.

This document contains the following sections:

- Project Management
- Site Selection and Priority Determination
- Field Protocol for Floatables Monitoring
- Data Management and Reporting
- Public Education and Outreach



## II. Project Management

The MS4 Program Coordination Section (MPCS) of the Stormwater Planning Division (SWPD) of the Department of Public Works and Environmental Services (DPWES) has partnered with the Clean Fairfax Council, Inc. (CFC) to conduct the floatables monitoring required by the MS4 permit and to develop a litter prevention public education and outreach plan. All major project decisions are made jointly by CFC and the MPCS, and CFC is responsible for conducting field work, data entry, ensuring data quality, and preparing reports. The site selection procedure is detailed below.

Floatables monitoring is used to assess the effectiveness of the County's litter prevention program by documenting trends in trash discharged from the MS4. More specifically, the project will determine the floatables loading rates at monitoring locations selected to be representative of the County's MS4 service area.

## III. Site Selection and Priority Determination

### a. Criteria for Identifying Candidate Sites

The intent of the floatables monitoring program is to determine the loading of floatables from the MS4 to streams within Fairfax County. The County used the data listed in Table 1 to target appropriate sites for floatables monitoring. The way these data sources were used to identify suitable areas for floatables monitoring during the desktop GIS analysis is described below.

**Table 1: GIS layers used to select floatable sites for monitoring**

GIS Layer	Dataset Name
MS4 service area	FairfaxCounty_MS4ServiceArea_2016
Land use	IPLS.IPLS_GENER_EXIST_LAND_USE
Fairfax hydrography layer	GISMGR.HYDRO_EDGES
Easements	STWMGR.EASEMENTS_POLYGONS

Floatable monitoring activities are focused on those areas that are regulated under the County's VSMP MS4 discharge permit. The County's MS4 service area consists of those drainage areas that discharge to an MS4 outfall that is owned or operated by Fairfax County. An MS4 outfall is defined as a point of discharge from a man-made channel or conveyance to surface waters of the State.

One key factor in selecting candidate areas for monitoring is land use, as represented by the County's land use codes for parcels. Additional factors to be considered when determining representative monitoring locations are geographic location within the county, and the contributing drainage area (size).

#### 1. Land Cover

Detailed land uses categories are organized into generalized index values according to the predominant activities occurring on the parcel that consist of agricultural, commercial, industrial, institutional, recreational, open land, low density residential (LDR), medium density residential (MDR), and high density residential (HDR).

Appendix A contains a list of all of the detailed land use categories in the county and

their corresponding generalized values (or types). The distribution of land use types in the County’s MS4 service area is presented in Table 2.

**Table 2: Distribution of Land Use Types in the County’s MS4 Service Area**

<b>Rank</b>	<b>Land Use Type</b>	<b>Acres</b>	<b>Percentage (%)</b>
1	Low Density Residential	39,122.1	56.4
2	Open Land	10,203.1	14.7
3	Commercial	4,517.3	6.5
4	Institutional	4,272.4	6.2
5	Medium Density Residential	3,244.6	4.7
6	High Density Residential	2,779.3	4.0
7	Recreational	2,687.4	3.9
8	Industrial	1,459.3	2.1
9	Utilities	580.2	0.8
10	Public	428.2	0.6
11	Agricultural	20.0	0.03
	<b>Total</b>	<b>69,313.8</b>	<b>100.0</b>

The top six land uses (low density residential (LDR), open land, commercial, institutional, medium density residential (MDR), and high density residential (HDR)) comprise the majority (92.5%) of the County’s MS4 service area. Because there is no target audience for litter prevention messaging in open land areas, and they are not likely to be a significant source of litter, this land use type is not included in the land uses targeted for site selection. As a result, the five land use types initially recommended for candidate monitoring locations are HDR, MDR, LDR, institutional, and commercial.

## **2. Contributing Area**

In addition to characterizing land use, monitoring locations should be selected to be representative of the service area in other aspects, such as the contributing drainage area. Initial monitoring locations, selected to characterize land cover classes, ranged in size from 11.1 to 28.7 acres (average = 18.7). However, an examination of the distribution of sizes for the entire population of individual service areas (figure 1.) shows that 71% of MS4 outfalls drain less than 10 acres of land. Monitoring locations should be selected to ensure that loading rates from these smaller drainage areas are adequately represented and analysis should clearly specify what population of the MS4 service area a location is intended to characterize.



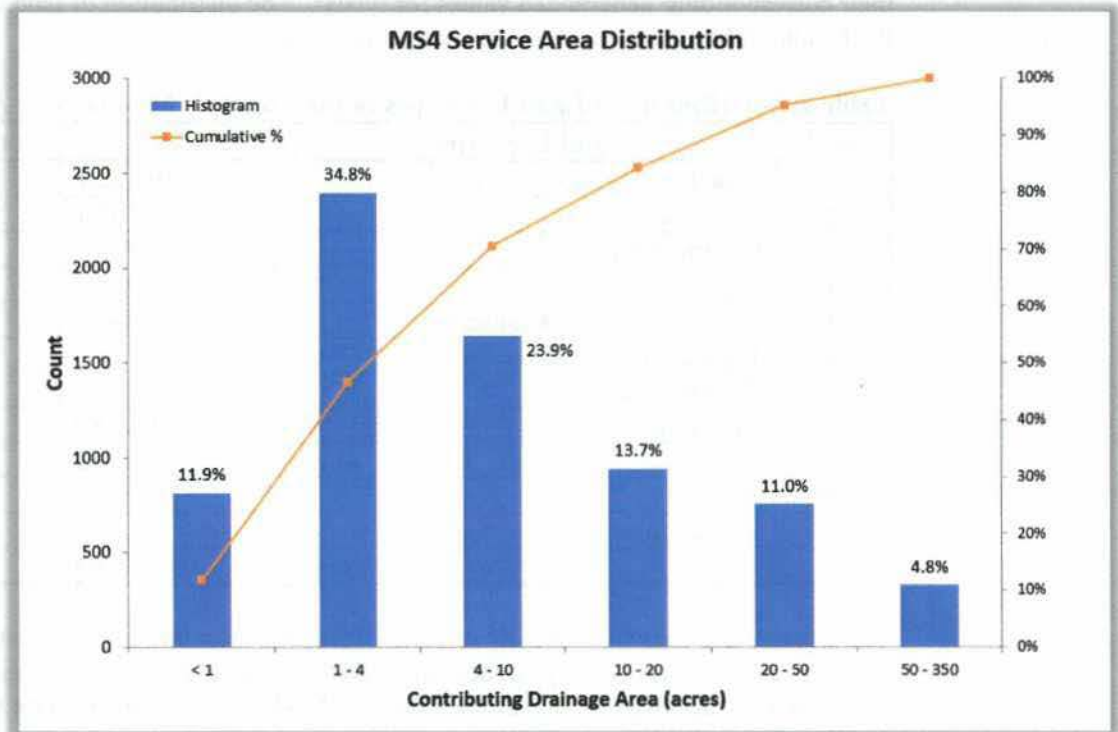


Figure 1. MS4 Service Area Size Distribution

### 3. Identification of Stream Segments

The County's hydrography layer is used to identify stream segments that receive stormwater discharges from MS4 service areas and are of sufficient length for sampling.

### 4. Easements

Maintenance and repair easements are required to allow the County to legally access portions of the storm drain network on private property for the purpose of conducting monitoring. The presence of easements is therefore another key factor in selecting candidate areas for monitoring.

#### b. Site Selection Protocols

The goal of the floatables monitoring program is to characterize the loading rate of floatables from the County's MS4. The most prevalent land uses in the MS4 service area were identified and prioritized for site selection as described in the previous section. This approach allows the floatables data collected at each site to be used to help target litter prevention outreach to each drainage area, and to detect any changes in the floatables loading from each area following targeted outreach efforts.

## **Level 1: Desktop Analysis**

Step 1: Overlay the County MS4 service area and land use layers to determine the proportions of each land use type for individual service areas.

Step 2: Identify the predominant land use for the contributing drainage area of each MS4 outfall.

Step 3: Select monitoring location segments that are minimally impacted by other outfalls and tributaries with upstream floatable sources.

Step 4: Identify the watershed and supervisor district where sites are located to ensure sites are distributed across the County and therefore more likely to be representative of the floatables loads from each land use type.

Step 5: Identify any nearby community groups that may help conduct stream cleanups, if needed.

Step 6: Coordinate with internal stakeholders to ensure that candidate sites are not scheduled for outfall repair, stream restoration activities, or trash collection device installation.

## **Level 2: Field Reconnaissance**

Step 7: Candidate sites from the site selection protocol are visited to assess suitability for monitoring, accessibility, safety, cooperative residents, and presence of a flowing stream.

1. Confirm that the MS4 outfall discharges to a flowing stream, preferably headwaters.
2. Evaluate site accessibility, landowner permission, and safety of the area for the purpose of conducting stream cleanups. If access to the outfall is impeded by dangerous terrain or fences, then choose another site.
3. Confirm that the source of floatables observed is from the MS4 (not illegal dumping or direct discharges from overland sources).
4. Confirm (if possible) that the monitoring data is representative of the location and that the monitoring is providing useful information.

### **c. Adaptive Management**

As specified in the MS4 permit, the floatables monitoring program will evaluate effectiveness of the program on an annual basis to ensure that program goals are being met by program standard operating procedures. If annual monitoring indicates that site locations are not providing representative data needed to estimate floatable loading rates, staff will address the issue, update the procedures, and document the rationale and corrective measure in the MS4 Annual Report or Program Plan.

### **d. Site Characterization for Floatables Loading Analysis**

For each monitoring site, the following information is used to characterize the location in the GIS data layer:

1. Outfall Stormnet ID
2. Predominant Land Use Type
3. MS4 contributing drainage area in acres
4. Percentage of each land use type
5. Location description (address or street intersection)
6. Magisterial District
7. Watershed
8. Receiving waterbody stream name
9. Community Association (for targeted outreach, support with clean ups)

#### **IV. Field Protocol for Floatables Monitoring**

This section provides details of the protocols to be followed during floatables monitoring deployments and includes descriptions of sampling equipment, sampling frequency, and antecedent condition requirements.

##### **a. Health and Safety**

Ensuring the health and safety of field personnel is the responsibility of every member of the staff for the project. The collective effort of all staff members in providing a healthy and safe work environment helps to minimize or eliminate the potential for accidents. Safety protocols designed to protect the field staff are outlined in Appendix B of this document.

- STW are to sign out on the board near the administration staff.
- Attempt to perform field work in teams of at least two. If field work must be completed by one person, ensure that the itinerary is shared with staff and confirm check-in on return to the office by phone or in-person.
- Wear hi-visibility vest.
- Bring mobile phone and first aid kit on all field site visits.
- Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
- Do not conduct sampling during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.
- Storm sewers contain a variety of water-borne bacteria and other harmful chemicals. Wash hands or use anti-bacterial wipes or hand gels liberally, especially prior to lunch breaks, etc.

Additional information on Health and Safety may be found in Appendix B, including information on field staff conduct, personal protective equipment, dangerous flora and fauna, unknown hazardous substances and wastes, blood borne pathogens, remote areas, hand tool safety, weather-related hazards, and heat and cold stress.

##### **b. Sampling Methods**

Monitoring at all five sites is conducted exclusively by SWPD and/or CFC staff. Staff performing monitoring for the first time will be trained in the implementation of this protocol.



## **1. Site Establishment**

At each of the five monitoring sites, staff measure and mark off 100 linear feet of the stream receiving discharge from the MS4. Staff place additional flags at the midpoint (50 feet) of the monitoring area, as well as determine and mark off the bank full width at each site. Staff photograph markings for inclusion in program documentation and to ensure consistency of the monitored area at each site. On monitoring events, all trash is enumerated within the marked area; which consists of the bank full width along the 100-foot stream segment.

## **2. Site Visits and Monitoring**

Field staff use the MS4 Floatables Monitoring data sheets to tally and summarize counts of trash within the sampling area marked at each site. The datasheets consist of:

1. Cover sheet with detailed site identification and a floatable count summary of individual tally sheets on the reverse side, and
2. Tally sheet(s) with floatable subcategory type definitions on the reverse side.

The MS4 Floatables Monitoring data sheets were created through coordination with the MPCs and CFC. Where possible, efforts were made to be consistent with the Metropolitan Washington Council of Governments' Anacostia Watershed Trash Survey form. The tally sheet is organized by five major categories:

1. Food and beverage,
2. Household items,
3. Recreation equipment and advertising,
4. Hazardous materials, and
5. Other trash items.

Each of the major categories contains a series of more detailed subcategory options that are included on the tally sheets. The cover sheet and tally sheet are included in Appendix C.

For each monitoring event, the following occurs:

1. The designated crew chief fills out the cover sheet for the monitoring event.
2. The crew chief determines the number of data recorders needed to enumerate the floatables for the monitoring event and distributes data sheets to the recorders.
3. When a site is subdivided into more than one monitoring area, the crew chief assigns data recorders to clearly delineated sections for each subarea.
4. Data recorders fill out each item in the header section of the datasheet; no items are to be left blank. Slashes, zeros or "N/A" are used for any item as needed, to confirm that there has not been an omission.
5. Data recorders tally the types (subcategories) of floatables observed in the monitoring area on the datasheet in pencil. In order to ensure legibility, mistakes are crossed out instead of erased.
6. Data recorders review the subcategory definitions on the reverse side of the form if there are any questions about the appropriate category for an item.
7. After counting all of the floatables in the monitoring area, data recorders reconvene and identify the total number of data sheets that have been used. Each sheet is then numbered individually, starting with the cover sheet, and including the total number of sheets that have been used.



8. On the tally sheet(s), data recorders count all tally marks and summarize the total numbers for each detailed subcategory of trash in the total column.
9. Data recorders exchange tally sheets and perform independent reviews of each other's datasheet(s) for completeness, and to check the calculation of totals by subcategory and category. The reviewer initials the "Reviewed by" section to document that the review is complete.
10. On the 'Floatable Count Summary' (rear of the cover sheet), the crew chief summarizes the totals for each subcategory of trash from each datasheet to determine the overall total. This summary includes the arithmetic used to determine overall totals.
11. The following digital photographs are taken on each monitoring event and numbered on the cover sheet.
  - a. Photo of cover sheet to identify site and subsequent photos
  - b. Photo of the MS4 outfall
  - c. Photo of the survey area from the downstream end facing upstream.
  - d. Photo of the survey area from the outfall looking downstream.
  - e. Additional photos of any notable observations
12. The file names of the digital photos are recorded on the cover sheet in the photo documentation section.
13. The crew chief confirms that tally sheets have been reviewed, and reviews the Floatable Count Summary and Cover sheets for completeness and accurate arithmetic.
14. After the site visit, the crew chief scans the completed and reviewed datasheet(s) and saves them on the MS4 SharePoint site using the conventions described in Section V.b (Field Sheet Retention and Storage).

Steps 12 through 14 are conducted when the team returns to the office.

### **c. Sampling Frequency**

The County's permit specifies sampling must take place four times per year at five sites. Under this protocol, sampling is performed once per quarter during a yearly monitoring period at each floatables monitoring site.

The program is designed to monitor immediately downstream from five outfalls on a quarterly basis. Cleanup events are conducted after each monitoring event. Additional outreach and cleanup events are planned to engage local communities and provide education and outreach to target audiences in the monitored sewershed. The Floatable Monitoring Cover sheet includes a section to record the date of the last clean up event, since these events can impact the amount of floatables observed.

### **d. Rainfall Criteria**

Sampling shall not take place if it has rained 0.2 inches or more in the 48 hours preceding the sampling event. This is intended to ensure staff safety and to minimize the possibility of turbid conditions in receiving waters that could interfere with the sampling crew's ability to detect trash items. The Floatable Monitoring Cover sheet includes a section to record the total amount of precipitation within the 48 hours preceding the monitoring event to confirm

adherence to this requirement. Rainfall data is obtained from the National Weather Service weather station at Washington/Dulles International Airport.

## **V. Data Management and Quality Control**

Quality control is designed to ensure a high level of quality for the data collected through the floatables monitoring protocol. This includes the actions necessary to verify and control the quality of the data collected, with an overall goal of producing dependable data. The following elements of the floatables monitoring protocol are implemented in order to ensure data quality:

### **a. Reliability and Consistency of Recording**

In an effort to minimize discrepancies in the recorded data that may stem from interpersonal variability of the field staff, data recorders periodically conduct duplicate surveys of a monitoring area. Staff then compare results and discuss any differences in counts due to differences in the categorization of floatables or other ways that counts were recorded. Staff review the subcategories of floatables (and their descriptions) and repeat these duplicate surveys until consistent results are achieved. Staff clearly identify the datasheets from these exercises as QA/QC, retain them, and file them appropriately.

The process described in Section IV.b.2 provides details on the multiple reviews that are intended to minimize the recording of illegible writing, arithmetic errors, and other oversights. The section also includes procedures intended to minimize the possibility of lost or missing datasheets and misinterpretation of blank values.

### **b. Field Sheet Retention and Storage**

The following processes are used to digitize and store original datasheets to maintain data integrity and to support the necessary reporting requirements.

1. Paper data sheets are used in the field and scanned within 3 business days in the office. Scanned sheets are named using the convention: SITE-QUARTER-MMDDYYYY (e.g. HDR-Q2-03262017 (High Density Residential, 2<sup>nd</sup> quarter, March 26, 2017), LDR-3-06012017 (Low Density Residential, 3<sup>rd</sup> quarter, June 1<sup>st</sup>, 2017)).
2. Digital Photos are re-named using the convention: SITE-QUARTER-MMDDYYYY-# (e.g. COM-Q2-03262017-1 (Commercial, 2<sup>nd</sup> quarter, March 26<sup>th</sup>, 2017, 1<sup>st</sup> photo)).
3. Scanned datasheets and digital photos are uploaded to the MS4 Coordination SharePoint site (<http://fairfaxnet.fairfaxcounty.gov/dept/DPWES/ms4>) for the floatable monitoring program into the appropriate directory. The naming convention used for directories is YEAR-QUARTER (e.g. 2016-Q2 (second quarter of 2016)).
4. Original datasheets are delivered to the MS4 Program Coordination Section and filed by the MS4 program staff.
5. The final, reviewed counts are entered into ArcGIS Collector with seven (7) business days of the monitoring event.

Typically, data entry is completed by CFC. QA/QC of the data entry is performed by comparing the data entered into ArcGIS Collector with the scanned data sheets. In the event that CFC is unable to complete the QA/QC for the data entry, County staff from SWPD will perform it. Tables and figures used in the annual reports are reviewed for accuracy by the MPCS prior to use in the reports.



### **c. Monitoring Reports Retention and Storage**

Floatables Monitoring Program data are stored in ArcGIS Collector. Annually, this data is exported from ArcGIS and analyzed. All analyzed data is placed on the MS4 Coordination SharePoint site. The analysis of this data allows staff to define a target audience and message to conduct public outreach and education, as well as estimate the loading rate of floatables from the MS4. CFC will provide quarterly progress reports via email that include a brief summary of progress and identify any barriers the project has encountered. Annual reports will be created by the MPCS. CFC and the MPCS will retain all data reports for 5 years after the permit expiration date.

### **d. Monitoring Yearly Report**

Annual reporting is conducted by the MPSC at the end of each MS4 reporting cycle (July 1 – June 30) as part of the County’s Annual MS4 report to VA DEQ. For permit years two and three, reports will include the monitoring protocols for the floatables monitoring program and data collected using the protocols. For permit years four and five, reports will include comparisons to previous years monitoring efforts and results. The year five report will also include an overall summary of the floatables monitoring program and recommendations for future floatables screening efforts. The report will contain narratives for each area monitored and briefly describe results. The yearly report includes the following:

- a list of the sites monitored,
- a summary of the monitoring protocols used; and
- a summary of the monitoring results and analyses.

## **VI. Public Education and Outreach**

Clean Fairfax Council identifies community gathering places (libraries, churches, community centers, businesses, shopping centers, etc.) located within the area draining to each monitoring site using existing County GIS overlays and field verification. Whenever possible, efforts are made to involve community members in developing solutions to a litter problem. Also, community members are encouraged to join available environmental stewardship programs such as watershed “Friends of” groups.

Outreach and education may include the following:

- Litter prevention educational outreach messages that are specific to each monitored location using compelling and easy-to-understand information about the short- and long-term effects of floatables pollution. This could include articles and/or pictures for newsletters, bulletin board posters, flyers, website postings, and the use of social media.
- Distribution of free reusable water bottles and/or grocery bags, depending on what is the most frequently found item in the monitored area
- CFC will conduct location-specific presentations once per year, following one monitoring/clean up event to engage citizens in their own backyard
- Yearly participant survey to determine changes in attitude and/or behavior regarding litter/recycling and the use of reusable materials
- Installation of additional trash and/or recycling receptacles, anti-littering signage, etc.

## **VII. Contacts**

<b>Agency</b>	<b>Contact</b>	<b>Phone</b>
MS4 Program Coordination Section	Heather Ambrose	703-324-5816
MS4 Program Coordination Section	Marty Hurd	703-324-5644
MS4 Program Coordination Section	Emily Burton	703-324-5637
Clean Fairfax Council, Inc.	Jen Cole	703-324-5471
Clean Fairfax Council, Inc.	Zach Huntington	804-214-1905

## **VIII. Administrator of the SOP**

This SOP document is administered by the MPCS within the SPWD. For more information about this document, please call the Stormwater Planning Division at (703) 324-5500.

## **IX. Appendices**

### **A. Land Use Codes and Descriptions**

### **B. Health and Safety Guidance for Floatables Monitoring Field Work**

### **C. Floatables Monitoring Field Data Sheets**



**Appendix A: Land Use Codes (LUC) and Descriptions.**

LUC	Detailed Land Use Description	Generalized Value	Sub Category
910	Agriculture activities and related services	AGRICULTURAL	Industrial
920	Forestry activities and related services	AGRICULTURAL	Industrial
930	Horticultural activities	AGRICULTURAL	Industrial
081	Motel w/o restaurant and/or other commercial amenity	COMMERCIAL	Retail
082	Motel w/ restaurant and/or other commercial amenity	COMMERCIAL	Retail
083	Hotel w/o restaurant and/or other commercial amenity	COMMERCIAL	Retail
084	Hotel w/ restaurant and/or other commercial amenity	COMMERCIAL	Retail
085	Tourist home	COMMERCIAL	Retail
089	Other Transient Lodging, NEC	COMMERCIAL	Retail
311	Neighborhood shopping center	COMMERCIAL	Retail
312	Specialty shopping center	COMMERCIAL	Retail
313	Community shopping center	COMMERCIAL	Retail
314	Regional shopping center	COMMERCIAL	Retail
315	Super regional shopping center	COMMERCIAL	Retail
316	Promotional shopping center	COMMERCIAL	Retail
317	Town shopping center	COMMERCIAL	Retail
318	Condo shopping center	COMMERCIAL	Retail
320	Building materials, hardware, farm equipment	COMMERCIAL	Retail
331	Department stores	COMMERCIAL	Retail
332	Discount stores	COMMERCIAL	Retail
333	Variety or junior department stores	COMMERCIAL	Retail
334	Apparel and accessories	COMMERCIAL	Retail
335	Furniture, house furnishings	COMMERCIAL	Retail
336	Drug stores	COMMERCIAL	Retail
337	Condo retail	COMMERCIAL	Retail
341	Supermarket	COMMERCIAL	Retail
342	Supermarket plus general merchandise	COMMERCIAL	Retail
343	Convenience grocery	COMMERCIAL	Retail
349	Other food NEC (including fruit, meat, fish, etc.)	COMMERCIAL	Retail
351	Restaurant with alcohol includes a wide range of b	COMMERCIAL	Retail
352	Restaurant without alcohol typified by a high rat	COMMERCIAL	Retail
353	Carry-out Kitchen distinguishing characteristic is	COMMERCIAL	Retail
354	Carry-out with seating generally a fast food opera	COMMERCIAL	Retail
359	Other eating and drinking NEC	COMMERCIAL	Retail
361	Motor vehicle sales (new and used)	COMMERCIAL	Retail
362	Gasoline and service station	COMMERCIAL	Retail
363	Gasoline sale only	COMMERCIAL	Retail
364	Gasoline sales and car wash	COMMERCIAL	Retail
365	Service station out of operation, but not yet conv	COMMERCIAL	Retail

LUC	Detailed Land Use Description	Generalized Value	Sub Category
369	Other automotive, marine, aircraft, and accessories	COMMERCIAL	Retail
390	Other retail NEC	COMMERCIAL	Retail
410	Office Park	COMMERCIAL	Office
421	General low rise office	COMMERCIAL	Office
422	Medical and/or dental low rise office	COMMERCIAL	Office
425	Condominium office (general, low rise)	COMMERCIAL	Office
426	Condominium office (medical and/or dental, low rise)	COMMERCIAL	Office
427	Cluster office (general, low rise)	COMMERCIAL	Office
428	Cluster office (medical and/or dental, low rise)	COMMERCIAL	Office
429	Converted residential office (ex-dwellings which h	COMMERCIAL	Office
431	General medium or high rise office	COMMERCIAL	Office
432	Medical and/or dental medium or high rise office	COMMERCIAL	Office
435	Condominium office (general, medium or high rise)	COMMERCIAL	Office
436	Condominium office (medical and/or dental, medium)	COMMERCIAL	Office
490	Other office NEC	COMMERCIAL	Office
510	Finance, insurance, real estate and professional s	COMMERCIAL	Retail
520	Personal services	COMMERCIAL	Retail
530	Motor vehicle repair when provided separately from	COMMERCIAL	Retail
540	Other repair services	COMMERCIAL	Retail
490	Other office NEC	COMMERCIAL	Office
338	Comm Use in Res Condo Dev	COMMERCIAL	
040	Garden apartments, rental	HIGH DENSITY RESIDENTIAL	Multi-family
041	Garden apartments, condominium	HIGH DENSITY RESIDENTIAL	Multi-family
042	Medium rise apartments, apartments rental	HIGH DENSITY RESIDENTIAL	Multi-family
043	Medium rise apartments, condominium	HIGH DENSITY RESIDENTIAL	Multi-family
044	High rise apartments, rental, without commercial/p	HIGH DENSITY RESIDENTIAL	Multi-family
045	High rise apartments, condm, without commercial/p	HIGH DENSITY RESIDENTIAL	Multi-family
046	High rise apartments, rental, with commercial/prof	HIGH DENSITY RESIDENTIAL	Multi-family
047	High rise apartments, condm, with commercial/p	HIGH DENSITY RESIDENTIAL	Multi-family
048	Combination of structure types, predominantly apts.	HIGH DENSITY RESIDENTIAL	Multi-family
049	Apartments, NEC, including cooperatives	HIGH DENSITY RESIDENTIAL	Multi-family
071	Rooming and boarding houses	HIGH DENSITY RESIDENTIAL	Government/Institution



LUC	Detailed Land Use Description	Generalized Value	Sub Category
072	Membership lodgings	HIGH DENSITY RESIDENTIAL	Single Family
073	Residence halls and dormitories	HIGH DENSITY RESIDENTIAL	Multi-family
074	Retirement homes and orphanages	HIGH DENSITY RESIDENTIAL	Multi-family
075	Religious quarters	HIGH DENSITY RESIDENTIAL	Government/Institution
076	Nursing homes	HIGH DENSITY RESIDENTIAL	Government/Institution
079	Other group quarters NEC (except. Military & Correc	HIGH DENSITY RESIDENTIAL	Government/Institution
111	Planned industrial park	INDUSTRIAL	Industrial
112	Industrial conglomeration	INDUSTRIAL	Industrial
121	Durable manufacturing	INDUSTRIAL	Industrial
126	Durable manufacturing (where in a condominium devl	INDUSTRIAL	Industrial
127	Durable manufacturing (where in a cluster devl.)	INDUSTRIAL	Industrial
131	Nondurable manufacturing	INDUSTRIAL	Industrial
135	Printing and publishing	INDUSTRIAL	Industrial
136	Nondurable manufacturing (where in a condo devl.)	INDUSTRIAL	Industrial
137	Nondurable manufacturing (where in a cluster devel	INDUSTRIAL	Industrial
140	Research and testing, where not in office bldg or	INDUSTRIAL	Industrial
146	Research and testing (where in condo devl.)	INDUSTRIAL	Industrial
147	Research and testing (where in cluster devl.)	INDUSTRIAL	Industrial
150	Wholesale, warehousing and storage	INDUSTRIAL	Industrial
151	Mini-warehouses	INDUSTRIAL	Retail
156	Wholesale, warehousing and storage (where in a con	INDUSTRIAL	Industrial
157	Wholesale, warehousing and storage (where in a clu	INDUSTRIAL	Industrial
160	Contract construction	INDUSTRIAL	Industrial
166	Contract construction (where in condo devl.)	INDUSTRIAL	Industrial
167	Contract construction (where in cluster devl.)	INDUSTRIAL	Industrial
190	Other industrial NEC	INDUSTRIAL	Industrial
941	Sand and gravel quarrying	INDUSTRIAL	Industrial
949	Other resource production and extraction	INDUSTRIAL	Industrial
550	Veterinary hospitals	INSTITUTIONAL	Retail
610	Cemeteries	INSTITUTIONAL	Government/Institution
620	Hospital and health facilities (except nursing home	INSTITUTIONAL	Government/Institution
660	Correctional institutions	INSTITUTIONAL	Government/Institution
670	Military institutions	INSTITUTIONAL	Government/Institution
680	Welfare and charitable services	INSTITUTIONAL	Government/Institution
690	Other public and quasi public service land uses NE	INSTITUTIONAL	Government/Institution

<b>LUC</b>	<b>Detailed Land Use Description</b>	<b>Generalized Value</b>	<b>Sub Category</b>
710	Churches, synagogues	INSTITUTIONAL	Government/Institution
720	Civic, social, fraternal, professional, business a	INSTITUTIONAL	Government/Institution
730	Libraries	INSTITUTIONAL	Government/Institution
740	Permanent exhibitions	INSTITUTIONAL	Government/Institution
751	Nursery schools	INSTITUTIONAL	Government/Institution
752	Public elementary, intermediate, secondary, high a	INSTITUTIONAL	Government/Institution
753	Private schools	INSTITUTIONAL	Government/Institution
754	College, universities	INSTITUTIONAL	Government/Institution
755	Special training schools	INSTITUTIONAL	Government/Institution
759	Other educational services NEC	INSTITUTIONAL	Government/Institution
790	Other cultural and entertainment service land uses	INSTITUTIONAL	Government/Institution
011	Single-family, detached	LOW-DENSITY RESIDENTIAL	Single Family
012	Single-family, semidetached or garden court	LOW-DENSITY RESIDENTIAL	Townhouse
051	Mobile homes in park or court	LOW-DENSITY RESIDENTIAL	Multi-family
052	Mobile homes not in park or court	LOW-DENSITY RESIDENTIAL	Single Family
060	Residential hotels and motels	LOW-DENSITY RESIDENTIAL	Multi-family
091	Other residential on separate but adjacent parcel	LOW-DENSITY RESIDENTIAL	Low Density Single Fam
099	Other residential NEC	LOW-DENSITY RESIDENTIAL	Low Density Single Fam
013	Two or more single-family, detached on single parcel	MEDIUM-DENSITY RESIDENTIAL	Single Family
014	Single-family structure NEC	MEDIUM-DENSITY RESIDENTIAL	Single Family
015	Single-family residences located in an area where	MEDIUM-DENSITY RESIDENTIAL	Single Family
021	Duplex, either vertical or horizontal	MEDIUM-DENSITY RESIDENTIAL	Townhouse
029	Two-family NEC	MEDIUM-DENSITY RESIDENTIAL	Townhouse
031	Townhouse, in ownership development	MEDIUM-DENSITY RESIDENTIAL	Townhouse
032	Townhouse, in condominium development	MEDIUM-DENSITY RESIDENTIAL	Townhouse
033	Townhouse, in rental development	MEDIUM-DENSITY RESIDENTIAL	Townhouse
034	Multiplex (except duplex) in ownership development	MEDIUM-DENSITY RESIDENTIAL	Multi-family
035	Multiplex (except duplex) in ownership development	MEDIUM-DENSITY RESIDENTIAL	Multi-family
036	Multiplex (except duplex) in rental development	MEDIUM-DENSITY RESIDENTIAL	Multi-family



LUC	Detailed Land Use Description	Generalized Value	Sub Category
037	Combination of structure types, predominantly townh	MEDIUM-DENSITY RESIDENTIAL	Townhouse
039	Townhouse or mutiplex structures NEC, including co	MEDIUM-DENSITY RESIDENTIAL	Townhouse
092	Private open space with a planned development or	OPEN LAND, NOT FORSTED OR DEVELOPED	Private Open Space
093	Private open space, not in a planned development	OPEN LAND, NOT FORSTED OR DEVELOPED	Private Open Space
950	Permanent conservation areas	OPEN LAND, NOT FORSTED OR DEVELOPED	Private Open Space
971	Vacant land	OPEN LAND, NOT FORSTED OR DEVELOPED	Vacant Land
972	"Improved lands with dilapidated structure of no v	OPEN LAND, NOT FORSTED OR DEVELOPED	Vacant Land
990	Other resource uses and undeveloped are NEC	OPEN LAND, NOT FORSTED OR DEVELOPED	Vacant Land
423	Government leased low rise office	PUBLIC	Government/Institution
424	Government owned low rise office	PUBLIC	Government/Institution
433	Government leased medium or high rise office	PUBLIC	Office
434	Government owned medium or high rise office	PUBLIC	Government/Institution
630	Post offices	PUBLIC	Government/Institution
640	Police Stations	PUBLIC	Government/Institution
650	Fire and rescue stations	PUBLIC	Government/Institution
760	Places of public assembly	PUBLIC	Government/Institution
811	Private recreation facilities and parks outdoor	RECREATION	Private Open Space
812	Commercial recreation facilities and parks Outdoor	RECREATION	Private Open Space
813	Government owned open to public with or without fe	RECREATION	Public Recreation
821	Private recreation facilities INDOOR	RECREATION	Retail
822	Commercial recreation facilities and parks INDOOR o	RECREATION	Private Recreation
823	Government owned open to public without fee INDOO	RECREATION	Government/Institution
831	Private golf course	RECREATION	Private Recreation
832	Commercial golf course	RECREATION	Private Recreation
833	Government owned golf course	RECREATION	Private Recreation
841	OUTDOOR swimming pools (except HOA pools)	RECREATION	Private Recreation
842	INDOOR swimming pools (except HOA pools)	RECREATION	Private Recreation
850	Boating Marinas	RECREATION	Government/Institution
851	Condominium Boat slips	RECREATION	Government/Institution
094		RECREATION	
211	Railroad	UTILITIES	Government/Institution
212	Rail rapid transit	UTILITIES	Government/Institution
213	Bus	UTILITIES	Government/Institution
214	Motor freight transportation	UTILITIES	Industrial
215	Street and highway right-of-way	UTILITIES	Industrial

<b>LUC</b>	<b>Detailed Land Use Description</b>	<b>Generalized Value</b>	<b>Sub Category</b>
216	Auto parking	UTILITIES	Industrial
217	Air	UTILITIES	Government/Institution
218	Marine terminals	UTILITIES	Industrial
219	Other transportation NEC	UTILITIES	Industrial
221	Utilities, Electric	UTILITIES	Government/Institution
222	Utilities, Gas	UTILITIES	Government/Institution
223	Utilities, Water	UTILITIES	Government/Institution
224	Utilities, Sewage	UTILITIES	Government/Institution
225	Utilities, Solid waste disposal	UTILITIES	Government/Institution
226	Pipeline rights-of-way and pressure control station	UTILITIES	Government/Institution
229	Other Utilities	UTILITIES	Government/Institution
231	Telephone and telegraph	UTILITIES	Industrial
232	Radio and television	UTILITIES	Industrial
239	Other communications, NEC	UTILITIES	Industrial

## **Appendix B: Health and Safety Guidance for Floatables Monitoring Field Work**



## **General**

Health and safety responsibility and accountability involves every employee. The collective effort of all employees in providing a healthy and safe work environment will minimize or eliminate the potential for accidents. In general, field sampling will require the following safety protocol to protect the field staff:

1. Stormwater staff will sign in/out on the board near the administration staff.
2. Perform field work in teams of at least two.
3. Bring cell phone and first aid kit on all field site visits.
4. Exercise caution when encountering any wildlife and hazardous plants. In addition, many outfalls are located in remote areas that may be near gathering places for homeless or transient individuals. Do not enter a potentially hostile area.
5. Use common sense during electrical storms and/or when severe conditions (e.g., high wind, hail) develop. The safety of field staff overrides all other considerations.

## **Conduct**

All field staff are expected to:

- Understand and comply with health and safety policies. Each employee is not only responsible and accountable for his/her own actions, but for those others around him/her.
- All employees shall show professional courtesy to fellow employees, clients, contractors, regulators, and visitors.
- Understand and follow good health and safety practices.
- Horseplay, practical joking, inattention to work or other inappropriate accident-causing behavior will not be tolerated.
- Smoking, eating, drinking and chewing shall be conducted only in designated areas.
- Use of alcohol or controlled substances is prohibited.
- While traveling to and from the job site, employees shall: obey all federal, state and local regulations regarding seat belt use, all traffic laws, and any other laws regarding proper conduct in public areas.

## **Personal protective equipment (PPE)**

Fairfax County high visible vest shall be worn during all monitoring. All employees shall dress appropriately for the tasks to be performed. Specialized health and safety equipment, including personal protective equipment, monitoring equipment, and other devices designed to protect the employee shall be issued to the employee on an as-needed basis.

## **Dangerous flora and fauna**

During the course of field activities, employees may come in contact with a wide range of dangerous or toxic animals and plants. Dangerous animals may include: black widow and brown recluse spiders; fire ants; mosquitoes and biting flies; bees, wasps and hornets; ticks and chiggers; microbial organisms (e.g., found in water, soil, and air and on carrier/host organisms); rabid mammals; and venomous snakes. Dangerous plants may include: thorny plants; poison ivy, oak, and sumac; and molds, mildews, and fungi (which may cause allergic reactions). Contact with these organisms can cause effects from



simple discomfort (such as from thorny bush scratches) to severe allergic reactions and possibly death. If interactions do occur, take appropriate actions related to specific interaction and individual response to interaction.

### **Unknown hazardous substances and wastes**

The nature of environmental consulting often times requires the investigation of hazardous substances or wastes whose identity is not known. Because of the serious personal and environmental consequences of unintentional release of chemicals, very specific health and safety procedures must be implemented to monitor ambient conditions, mitigate releases to the environment, and protect workers from exposure. Most of these procedures dovetail with site investigation, sampling, and remediation techniques outlined by EPA policy and should be included in the project comprehensive work plan.

### **Bloodborne pathogens**

Exposure to blood borne pathogens (BBP) is possible in the case of certain emergency situations. Personnel may be exposed to body fluids such as blood, saliva, vomit, mucus or others. These fluids could contain pathogens that have the potential for causing disease in humans. Should personnel be required to administer lifesaving procedures, such as CPR, the following procedures will be followed to minimize the potential for exposure:

1. Wear disposable gloves when hand contact with blood, mucus membranes, non-intact skin or other potentially infectious materials could be involved;
2. Use disposable mouthpieces, pocket masks or other ventilation devices for administering artificial ventilation;
3. Wash hands with soap and water after administering first aid;
4. In the case of eye contact, flush eyes using an eye wash for at least 15 minutes;
5. Remove garments contacted by blood or other body fluids as soon as possible;
6. Do not eat, drink, smoke or handle contact lenses in areas with possible BBP exposure; and
7. Persons cleaning up an accident scene should not pick up broken glass or other sharp objects by hand. All clothes and other items at the first aid scene should be safely secured prior to leaving.

Employees who may have been exposed to BBPs should report the incident at once.

### **Weather related hazards**

Weather-related hazards include the potential for heat or cold stress, electrical storms, treacherous weather-related working conditions, high winds, and limited visibility. These hazards correlate with the season in which site activities occur. In the event of adverse weather conditions, the Field Team Leader will determine if work can continue without endangering the health and safety of site personnel.

### **Heat stress**

Heat stress is a significant potential hazard during the warmer months. Heat stress manifests itself as one of three conditions: heat cramps, heat exhaustion, or heat stroke. Heat cramps are brought about by a prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, triggering painful muscle cramps. The signs and symptoms of heat cramps include:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes shade, rest, and fluid replacement. The individual will drink electrolyte-replacement fluids (e.g., Gatorade, Squencher, 10-K), which will be made available to field personnel. If the individual has not recovered within ½ hour, then he/she will be transported to the hospital for medical attention.

Heat exhaustion usually occurs in a healthy individual who has been exposed to excessive heat while working or exercising. Blood collects near the skin in an effort to rid the body of excess heat. The signs and symptoms of heat exhaustion include:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin, with heavy perspiration;
- Skin appears pale;
- Fatigue, weakness, and/or dizziness; and
- Elevated body temperature.

First aid treatment includes cooling the victim, elevating the feet, and replacing fluids. If the individual has not recovered within ½ hour, he/she will be transported to the hospital for medical attention.

Heat stroke occurs when an individual is exposed to excessive heat, and their body systems become overwhelmed by heat and begin to stop functioning. This condition is a medical emergency, requiring the immediate cooling of the victim and transport to the hospital immediately. The signs and symptoms of heat stroke include:

- Victim has stopped sweating;
- Dry, hot, red skin;
- Body temperature approaching or above 105° F;
- Dilated (large) pupils; and
- Loss of consciousness; victim may lapse into a coma.

Local weather conditions may produce an environment which will require restricted work schedules in order to protect employees. The Field Team Leader will observe workers for any potential symptoms of heat stress. Adaptation of work schedules and training in recognition of heat stress conditions will help prevent heat-related illnesses from occurring.

### **Cold stress**

Cold stress is a danger at low temperatures and when the wind chill factor is low. Cold stress is generally described as a local cooling (frost nip, frost bite, and freezing) or a general cooling (hypothermia). Personnel working outdoors in temperatures at or below freezing may be subject to local cooling. Areas of the body that have a high surface area-to-volume ratio, such as fingers, toes, and ears, are the most susceptible. The three categories of local cooling include:



- Frost nip - characterized by a blanching or whitening of the skin;
- Frost bite - skin has a waxy or white appearance and is firm to the touch, but the tissue beneath is resilient; and
- Freezing - skin tissue is cold, pale, and solid.

Frost nip and frost bite first aid includes covering the affected area with warmth and retreating to a warm area. Frozen tissue is a medical emergency, and the victim will be transported to the hospital immediately.

General cooling (hypothermia) occurs when exposure to cold reduces body temperature. With prolonged exposure, the body becomes unable to maintain its proper internal temperature. Without treatment, hypothermia will lead to stupor, collapse, and death. The signs and symptoms of mild hypothermia include:

- Shivering;
- Numbness; and
- Drowsiness.

First aid for mild hypothermia includes using heat to raise the individual's body temperature. Heat may be applied to the victim in the form of heat packs, hot water bottles, and blankets.

The signs and symptoms of severe hypothermia include:

- Unconsciousness;
- Slowed respiration or respiratory arrest;
- Slowed pulse or cardiac arrest;
- Irrational or stuporous state; and
- Muscular rigidity.

First aid for severe hypothermia includes handling the victim very gently; rough handling may set off an irregular heartbeat. Do not attempt to re-warm the severely hypothermic victim; re-warming may cause the development of an irregular heartbeat. Severe hypothermia is a medical emergency, and the victim will be transported to the hospital immediately.

Prevention of cold stress is a function of whole body protection. Adequate insulated clothing will be worn when the air temperature drops below 50 °F. Reduced work periods may be necessary in extreme conditions to allow adequate periods in a warm area.

## Appendix C: Floatables Monitoring Field Data Sheet

Fairfax County MS4 Floatables Monitoring Survey Cover Page



<b>Date</b>	
<b>Fiscal Quarter</b>	
<b>Date of Last Cleanup</b>	
<b>Total Precipitation in last 48 hours (inches)</b>	
<b>Crew Conducting Survey</b>	
<b>Reviewer Initials</b>	
<b>Start Time</b>	
<b>End Time</b>	

<b>Monitoring Site</b>		
<b>STORMNET #</b>	<b>General Land Use</b>	<b>Check Site Monitoring is Being Conducted</b>
STMN0212404236	Low Density Residential	
STMN0402414843	Medium Density Residential	
STMN0791456509	High Density Residential	
STMN0293016090	Commercial	
STMN0583435398	Institutional	

<b>General Site Description</b>	
<b>Total of Photos Taken</b>	

<b>Total Number of Observed Items</b>	
<b>Food &amp; Beverage</b>	
<b>Household Items</b>	
<b>Recreation Equipment &amp; Advertising</b>	
<b>Hazardous Materials</b>	
<b>Other Trash Items</b>	
<b>TOTAL</b>	

Indicate total number of sheets for a given monitoring event and number of current sheet

Page 1 of \_\_\_\_

Floatables Monitoring Program – DATA COLLECTION

Site:

Date:

Photos Taken (Y/N):

Name:

Reviewed by:

**DIRECTIONS:**

- Add all tally sheets for each category and place category total count in colored box.
- Have reviewer check totals and sign at top.

<b>FOOD &amp; BEVERAGE</b>	<b>TOTAL:</b>	
Plastic Bags (SHOPPING):		
Plastic Bags (GARBAGE):		
Plastic Bags (OTHER):		
Wrappers:		
Water Bottles(PLASTIC):		
Other Beverage Bottles(PLASTIC):		
Glass Beverage Bottles:		
Beverage Cans:		
Disposable cups/lids/plates/cutlery/straws:		
Metal Food Cans:		
Fast Food To-Go Containers/Bags:		
Juice Boxes:		
Beverage Boxes/6-Pack Rings:		
Brands/Comments/Other:		
<b>HOUSEHOLD ITEMS</b>	<b>TOTAL:</b>	
Boxes/Cardboard:		
Packing Materials:		
Clothing/Fabric/Carpeting:		
Misc. (PLASTIC, METAL, GLASS):		
Newspapers/Magazines:		
Hangers:		
Brands/Comments/Other:		
<b>RECREATION EQUIPMENT &amp; ADVERTISING</b>	<b>TOTAL:</b>	
Balls/ Toys/ Balloons:		
Fishing:		
Signs/Flyers:		
Brands/Comments/Other:		
<b>HAZARDOUS MATERIALS:</b>	<b>TOTAL:</b>	
Smoking Products:		
Paint Cans:		
Medical Waste:		
Auto Chemicals and Parts:		
Bio-Waste:		
Brands/Comments/Other:		
<b>OTHER TRASH ITEMS:</b>	<b>TOTAL:</b>	
Tires:		
Shopping Carts:		
Bikes:		
Furniture:		
Electronics/Appliances:		
Construction Debris:		
Intact Bricks		
Brands/Comments/Other:		

Indicate total number of sheets for a given monitoring event and number of current sheet

Page \_\_\_ of \_\_\_



Floatables Monitoring Program – DATA COLLECTION

Site:

Date:

Photos Taken (Y/N):

Name:

Reviewed by:

<b>FOOD &amp; BEVERAGE</b>
Plastic Bags (SHOPPING): <i>grocery bags and department store bags; indicate brands below</i>
Plastic Bags (GARBAGE): <i>usually large black or clear bags</i>
Plastic Bags (OTHER): <i>newspaper bags, sandwich, quart and gallon size bags, dry cleaner bags, etc.</i>
Wrappers: <i>chip bags, candy wrappers, labels from bottles, bits of foil</i>
Water Bottles(PLASTIC):
Other beverage bottles(PLASTIC):
Glass Bottles: <i>count each collection of broken shards as one bottle; count partial bottle if mostly intact</i>
Beverage Cans: <i>soda, beer, etc.</i>
Disposable cups/lids/plates/cutlery/straws: <i>count straw separate from lid, lid separate from cup</i>
Metal Food Cans: <i>soup, canned meats, etc.</i>
Fast Food To-Go Containers/Bags: <i>note brand below</i>
Juice Boxes:
Beverage Boxes/6-Pack Rings:
Brands/Comments/Other: <i>Indicate locally traceable brands /Explain as needed/ Add count of unlisted items</i>
<b>HOUSEHOLD ITEMS</b>
Boxes/Cardboard:
Packing Materials: <i>count each large piece; Styrofoam; bubble wrap; and package bindings</i>
Clothing/Fabric/Carpeting: <i>include shoes; count each large piece of fabric</i>
Misc. (PLASTIC, METAL, GLASS): <i>include toiletry and cleaning product containers; bins; cookware; lids</i>
Newspapers/Magazines:
Hangers:
Brands/Comments/Other: <i>indicate locally traceable brands /Explain as needed/ Add count of unlisted items</i>
<b>RECREATION EQUIPMENT &amp; ADVERTISING</b>
Balls/Toys/ Balloons: <i>include bike parts and pieces of toys</i>
Fishing:
Signs/Flyers: <i>note origin below</i>
Brands/Comments/Other:
<b>HAZARDOUS MATERIALS:</b>
Smoking Products: <i>for large collections of cigarette butts, estimate number</i>
Paint Cans:
Medical Waste: <i>rubber tubing, rubber gloves, syringes, etc.</i>
Auto Chemicals and Parts: <i>containers from automotive chemical products; smaller auto parts not tires</i>
Bio-Waste: <i>dirty diapers, sanitary napkins, tampons, dog waste; count plastic bags separately above</i>
Brands/Comments/Other: <i>Indicate locally traceable brands /Explain as needed/ Add count of unlisted items</i>
<b>OTHER TRASH ITEMS</b>
Tires:
Shopping Carts:
Bikes:
Furniture:
Electronics/Appliances:
Construction Debris: <i>cinder blocks, large cement chunks, lumber etc.</i>
Intact Bricks: <i>Count mostly intact bricks</i>
Brands/Comments/Other: <i>Indicate locally traceable brands /Explain as needed/ Add count of unlisted items</i>

Indicate total number of sheets for a given monitoring event and number of current sheet

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Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R1

FY 2023 Fairfax County Adopted Budget Plan  
(Vol.2), Stormwater Services Budget

VSMP Permit Number VA0088587  
9-30-2022

# Fund 40100: Stormwater Services

## Mission

To develop and maintain a comprehensive watershed and infrastructure management program to protect property, health, and safety; to enhance the quality of life; and to preserve and improve the environment for the benefit of the public. To plan, design, construct, operate, maintain, and inspect stormwater infrastructure; perform environmental assessments through coordinated stormwater and maintenance programs in compliance with all government regulations utilizing innovative techniques, customer feedback and program review; and to be responsive and sensitive to the needs of the residents, customers, and public partners.

## Focus

Stormwater Services are essential to protect public safety, preserve property values and support environmental mandates such as those aimed at protecting the Chesapeake Bay and the water quality of other local jurisdictional waterways. Projects in this fund include repairs to stormwater infrastructure, measures to improve water quality such as stream stabilization, rehabilitation, safety upgrades of state regulated dams, repair and rehabilitation of underground pipe systems, surface channels, flood mitigation, site retrofits and best management practices (BMP), and other stormwater improvements.

The Board of Supervisors approved a special service district to support the Stormwater Management Program as part of the FY 2010 Adopted Budget Plan. This service district provides a dedicated funding source for both operating and capital project requirements by levying a service rate per \$100 of assessed real estate value, as authorized by Code of Virginia Ann. Sections 15.2-2400. Since FY 2010, staff has made significant progress in the implementation of watershed master plans, public outreach efforts, stormwater monitoring activities, water quality and flood mitigation project implementation and operational maintenance programs related to existing storm drainage infrastructure including stormwater conveyance, and regulatory requirements.

A rate of \$0.0400 per \$100 of assessed value has been estimated to be required to fully support the stormwater program in the future; however, staff is currently evaluating the long-term requirements for the program to address the growth in inventory and other community needs. Some of the additional community needs under evaluation include debt service to support the Board's approval of the dredging of Lake Accotink, the anticipation of additional flood mitigation requirements, and strengthening the role and financial support for the implementation of stormwater requirements associated with Fairfax County Public Schools sites under renovation. This enhanced program may require incremental changes to the rate over time and may result in a higher rate to fully support the program. Staff continues to evaluate these requirements, as well as the staffing to support them, and analyze the impact of increased real estate values and revenue projections.

One of the recent initiatives being funded by the Stormwater Fund is the new Public Works complex which will consolidate functions and operations and maximize efficiencies between the Stormwater and Wastewater Divisions. Stormwater operations are currently conducted from various locations throughout the County, and a new colocation of both Stormwater and Wastewater staff will provide efficiencies and sharing of resources. Another initiative in progress is the planned dredging of Lake Accotink. Lake Accotink is a 55-acre lake surrounded by managed conservation areas, wetlands, deciduous and evergreen forests, and historic and prehistoric sites. Over 300,000 patrons visit the park annually to enjoy a variety of facilities and activities that vary with the season. Sediment from the upstream areas of the watershed has continued to be deposited in Lake Accotink over the years filling in the lake and limiting recreational use. Estimates for the cost of dredging including sediment disposal are still under review. Staff has identified the option of a low interest loan via the Virginia Clean Water Revolving Loan Fund (VCWRLF) as the preferred funding mechanism to fund the dredging project costs. The Stormwater fund will pay the future debt costs.

# Fund 40100: Stormwater Services

While staff continues to further evaluate the impact of recent initiatives and the long-term requirements for the Stormwater Program, the FY 2023 rate will remain the same as the FY 2022 Adopted Budget Plan level of \$0.0325 per \$100 of assessed value. However, based on capital project costs and projected revenues, it is anticipated that in the next several years, incremental rate increases will be required based on continued growth of stormwater facilities and infrastructure that must be inspected and maintained by the County, the implementation of flood mitigation projects, and additional requirements in the forthcoming Municipal Separate Storm Sewer System (MS4) Permit. On an annual basis, staff will continue to evaluate the program, analyze future requirements, and develop Stormwater operational and capital resource needs.

The FY 2023 levy of \$0.0325 will generate \$94,393,055, supporting \$27,113,315 for staff and operational costs; \$65,879,740 for capital project implementation including, infrastructure reinvestment, regulatory requirements, dam safety, emergency and flood response and contributory funding requirements; and \$1,400,000 transferred to the General Fund to partially offset central support services such as Human Resources, Purchasing, Budget and other administrative services supported by the General Fund, which benefit this fund.

### Stormwater Services Operational Support

Stormwater Services operational support includes funding for staff salaries, Fringe Benefits, and Operating Expenses for all stormwater operations. In addition, Fund 40100 includes positions related to transportation operations maintenance provided by the Maintenance and Stormwater Management Division. Beginning in FY 2023, all funding for the transportation related salary expenses and equipment previously supported by Agency 87, Unclassified Administrative Expenses - Public Works Programs will be supported by capital projects in Fund 30010, General Construction and Contributions, as they do not qualify for expenses related to the stormwater service district. The transfer of funding to Fund 30010, General Construction and Contributions, will provide more transparency and the carryforward of balances at year-end.

Fund 40100 also supports the Urban Forestry Management Division (UFMD). The UFMD was established to mitigate tree loss and maximize tree planting during land development, enforce tree conservation requirements and monitor and suppress populations of Gypsy Moth, Emerald Ash Borer, and other forest pests. The division also implements programs needed to sustain the rich level of environmental, ecological, and socio-economic services provided by the County's tree canopy. The UFMD is aligned with the mission of Stormwater Services as it strives to "improve water quality and stormwater management through tree conservation." Tree canopy and forest soils function to mitigate significant levels of water pollution and stormwater runoff.

### FY 2023 Stormwater Capital Project Support

#### *Conveyance System Inspections, Development and Rehabilitation*

The County owns and operates approximately 1,500 miles of underground stormwater pipes and improved channels with an estimated replacement value of over one billion dollars. The County



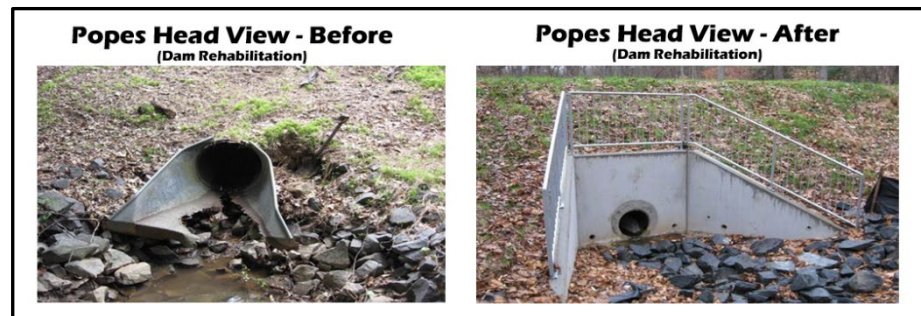


## Fund 40100: Stormwater Services

began performing internal inspections of the pipes in FY 2006. The initial results showed that approximately 5 percent of the pipes exhibit conditions of failure, and an additional 5 percent required maintenance or repair. MS4 Permit regulations require inspection and maintenance of these 1,500 miles of existing conveyance systems, 69,000 stormwater structures, and a portion of the immediate downstream channel at the 7,000 regulated pipe outlets. Acceptable industry standards indicate that one dollar reinvested in infrastructure saves seven dollars in the asset's life and 70 dollars if asset failure occurs. Once the initial internal inspections are complete, the goal of this program is to inspect pipes on a 20-year cycle and rehabilitate pipes and improve outfall channels before total failure occurs. Total funding in the amount of \$9.0 million is included for Conveyance System Inspections, Development and Rehabilitation in FY 2023, including \$2.0 million for inspections and development and \$7.0 million for rehabilitation and outfall restoration.

### *Dam Safety and Facility Rehabilitation*

There are approximately 7,900 stormwater management facilities in service that range in size from small rain gardens to large state regulated flood control dams. The County is responsible for inspecting approximately 5,500 privately-owned facilities and maintaining over 2,400 County owned facilities. This inventory increases annually and is projected to continually increase as new development and redevelopment sites occur in the County. This initiative also includes the removal of sediment that occurs in both wet and dry stormwater management facilities to ensure that



adequate capacity is maintained to treat the stormwater. The program results in approximately 50 projects annually that require design and construction management activities as well as contract management and maintenance responsibilities. This program maintains the structures and dams that control and treat the water flowing through County maintained facilities. This program improves dam safety by supporting annual inspections of 20 state-regulated dams and the Huntington Levee and by developing Emergency Action Plans required by the state. The Emergency Action Plans are updated annually. In addition, these plans include annual emergency drills and exercises, and flood monitoring for each dam. Total funding in the amount of \$15.0 million is included in FY 2023, including \$5.0 million for maintenance and \$10.0 million for rehabilitation.

### *Stormwater/Wastewater Facility*

This project will provide funding for a Stormwater/Wastewater Facility which will consolidate functions and operations and maximize efficiencies between the Stormwater and Wastewater Divisions. Currently, Stormwater operations are conducted from various locations throughout the County, with the majority of staff located at the West Drive facility. Facilities for field maintenance operations and for field/office-based staff are inadequate and outdated for the increased scope of the stormwater program, and inadequate to accommodate future operations. This project is currently in design with construction anticipated to begin in early 2022. The facility is financed by EDA bonds with the Stormwater Services Fund and Wastewater Fund supporting the debt service. Funding in the amount of \$4.2 million is included in FY 2023 to support the second year of debt service for the Stormwater/Wastewater Facility.



## Fund 40100: Stormwater Services

### *Emergency and Flood Response Projects*

This program supports flood control projects for unanticipated flooding events that impact storm systems and structural flooding. The program provides annual funding for scoping, design, and construction activities related to flood mitigation projects. Funding in the amount of \$7.0 million is included for the Emergency and Flood Response Projects in FY 2023.

### *Enterprise Asset Management-Work Order System*

This project will provide funding for the transition from an Enterprise Asset Management (EAM) system to a more functional Asset Management Program (AMP). This funding will support the acquisition of software, servers and consultant services to migrate asset management and related work order management into the new system. The current system tracks assets, inspections, daily work management and associated contractor costs. Features of the replacement system include geographic information system (GIS) integration and field mobility. The Department of Public Works and Environmental Services (DPWES) Information Technology staff have collaborated with the Stormwater Management and the Wastewater Management staff to promote interagency capabilities, optimize performance, and improve system lifecycle management for the new system. This new system will meet the future expectations for both divisions and optimize service delivery for DPWES. Funding in the amount of \$1.4 million is included in Capital Projects and an amount of \$800,000 is included in Operating Expenses for this project in FY 2023.

### *Stormwater-Related Contributory Program*

Contributory funds are provided to the Northern Virginia Soil and Water Conservation District (NVSWCD) and the Occoquan Watershed Monitoring Program (OWMP). The NVSWCD is an independent subdivision of the Commonwealth of Virginia that provides leadership in the conservation and protection of Fairfax County's soil and water resources. It is governed by a five-member Board of Directors - three members are elected every four years by the voters of Fairfax County and two members are appointed by the Virginia Soil and Water Conservation Board. Accordingly, the work of NVSWCD supports many of the environmental goals established by the Board of Supervisors. The goal of the NVSWCD is to continue to improve the quality of the environment and general welfare of the citizens of Fairfax County by providing them with a means of dealing with soil, water conservation and related natural resource problems. It provides County agencies with comprehensive environmental evaluations for proposed land use changes with particular attention to the properties of soils, erosion potential, drainage, and the impact on the surrounding environment. NVSWCD has consistently been able to create partnerships and leverage state, federal and private resources to benefit natural resources protection in Fairfax County. FY 2023 funding of \$0.6 million is included in Fund 40100 for the County contribution to the NVSWCD.

The OWMP and the Occoquan Watershed Monitoring Laboratory (OWML) were established to ensure that water quality is monitored and protected in the Occoquan Watershed. Given the many diverse uses of the land and water resources in the Occoquan Watershed (agriculture, urban residential development, commercial and industrial activity, water supply, and wastewater disposal), the OWMP plays a critical role as the unbiased interpreter of basin water quality information. FY 2023 funding of \$0.2 million is included in Fund 40100 for the County contribution to the OWMP.

### *Stormwater Allocation to Towns*

On April 18, 2012, the State Legislature passed SB 227, which entitles the Towns of Herndon and Vienna to all revenues collected within their boundaries by Fairfax County's stormwater service district. An agreement was developed for a coordinated program whereby the Towns remain part of the County's service district and the County returns 25 percent of the revenue collected from properties within each town. This allows for the Towns to provide services independently such as

# Fund 40100: Stormwater Services

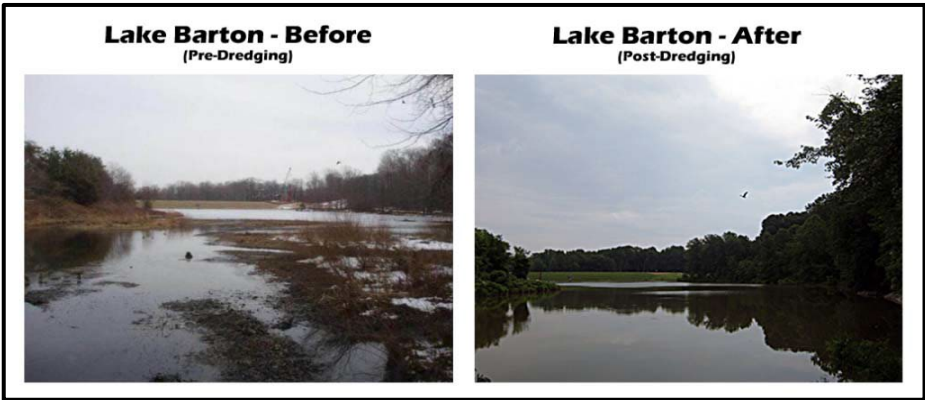
maintenance and operation of stormwater pipes, manholes, and catch basins. The remaining 75 percent remains with the County and the County takes on the responsibility for the Towns' Chesapeake Bay Total Maximum Daily Load (TMDL) requirements as well as other TMDL and MS4 requirements. This provides for an approach that is based on watersheds rather than on jurisdictional lines. Funding in the amount of \$1.0 million is included for the Stormwater Allocations to Towns project in FY 2023.

### *Regulatory Program*

The County is required by federal law to operate under the conditions of a state issued MS4 Permit. Stormwater staff annually evaluates funding required to meet the increasing federal and state regulatory requirements pertaining to the MS4 Permit, and State and Federal mandates associated with controlling water pollution delivered to local streams and the Chesapeake Bay. The MS4 Permit allows the County to discharge stormwater from its stormwater systems into state and federal waters. The County currently owns and/or operates approximately 15,000 outfalls, and 7,000 of these outfalls are regulated outfalls governed by the permit. The current permit was issued to the County in April 2015 and expired in April 2020. The County is operating under an administrative continuance until a new permit is issued. The permit requires the County to document the stormwater management facility inventory, enhance public outreach and education efforts, increase water quality monitoring efforts, provide stormwater management and stormwater control training to all appropriate County employees. The permit requires the County to implement sufficient stormwater projects that will reduce the nutrients and sediment to comply with the Chesapeake Bay and local stream TMDL requirements. Funding in the amount of \$4.0 million is included for the Stormwater Regulatory Program in FY 2023.

### *Stream and Water Quality Improvements*

This program funds water quality improvement projects necessary to mitigate the impacts to local streams and the Chesapeake Bay resulting from urban stormwater runoff. This includes water quality projects such as construction and retrofit of stormwater management ponds, implementation of green stormwater infrastructure facilities, stream restoration, and water quality projects identified in the completed Countywide Watershed Management Plans. These projects will aid in the reduction of

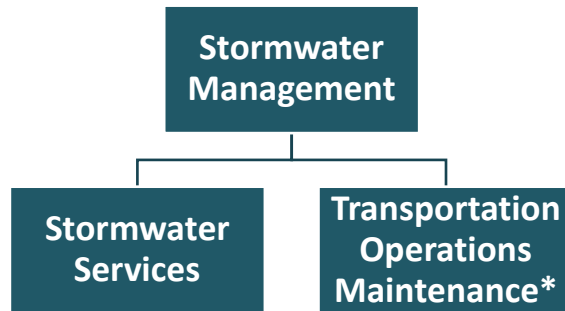


pollutants and improve water quality in county streams that are considered to be in fair to very poor condition and likely do not meet CWA water quality standards. In addition, Total Maximum Daily Load (TMDL) requirements for local streams and the Chesapeake Bay are the regulatory drivers by which pollutants entering impaired water bodies must be reduced. The Chesapeake Bay TMDL was established by the EPA and requires that MS4 communities as well as other dischargers implement measures to significantly reduce the nitrogen, phosphorous and sediment loads in waters that drain to the Chesapeake Bay by 2025. MS4 Permit holders must achieve 35 percent of the required reductions within the current five-year permit cycle and 60 percent of the required reductions in the

## Fund 40100: Stormwater Services

next five-year permit cycle. In addition, compliance with the Chesapeake Bay TMDL requires that the County undertake construction of new stormwater facilities and retrofit existing facilities and properties. The EPA continually updates the Chesapeake Bay compliance targets and credits. It is anticipated that the changes to the assigned targets as well as how projects are credited will likely impact future compliance requirements. In addition to being required to meet the Chesapeake Bay TMDL targets, the current MS4 Permit requires the County to develop and implement action plans to address local impairments. Most of the 1,900 watershed management plan projects contribute toward achieving the Chesapeake Bay and local stream TMDL requirements. Funding in the amount of \$23.5 million is included for Stream and Water Quality Improvements in FY 2023.

### Organizational Chart



\*Denotes functions that are included in both Fund 30010, General Construction and Contributions, and Fund 40100, Stormwater Services.

### Budget and Staff Resources

Category	FY 2021 Actual	FY 2022 Adopted	FY 2022 Revised	FY 2023 Advertised	FY 2023 Adopted
	\$20,448,442	\$22,615,643	\$22,813,269	\$24,580,634	\$24,580,634
	3,919,893	3,182,636	3,389,603	4,010,636	4,010,636
	1,077,511	782,000	1,887,143	652,000	652,000
	50,984,399	61,600,414	247,012,718	65,879,740	65,879,740
	<b>\$76,430,245</b>	<b>\$88,180,693</b>	<b>\$275,102,733</b>	<b>\$95,123,010</b>	<b>\$95,123,010</b>
	(\$1,832,157)	(\$2,129,955)	(\$2,129,955)	(\$2,129,955)	(\$2,129,955)
	<b>\$74,598,088</b>	<b>\$86,050,738</b>	<b>\$272,972,778</b>	<b>\$92,993,055</b>	<b>\$92,993,055</b>
	202 / 202	200 / 200	200 / 200	208 / 208	208 / 208

### FY 2023 Funding Adjustments

*The following funding adjustments from the FY 2022 Adopted Budget Plan are necessary to support the FY 2023 program. Included are all adjustments recommended by the County Executive that were approved by the Board of Supervisors, as well as any additional Board of Supervisors' actions, as approved in the adoption of the Budget on May 10, 2022.*

#### **Employee Compensation** **\$1,214,199**

An increase of \$ 1,214,199 in Personnel Services includes \$850,684 for a 4.01 percent market rate adjustment (MRA) for all employees and \$363,515 for performance-based and longevity increases for non-uniformed merit employees, both effective July 2022.

#### **Other Post-Employment Benefits** **(\$106,403)**

A decrease of \$106,403 in Personnel Services reflects required adjustments associated with providing Other Post-Employment Benefits (OPEBs) to retirees, including the Retiree Health Benefits Subsidy. For more information on Other Post-Employment Benefits, please refer to Fund 73030, OPEB Trust, in Volume 2 of the FY 2023 Adopted Budget Plan.

#### **New Positions** **\$885,195**

An increase of \$885,195 including Personnel Services of \$857,195 and Operating Expenses of \$28,000 is necessary to fund requirements associated with 8/8.0 FTE new positions, including 1/1.0 Engineering Technician III, 1/1.0 FTE Planner III, 1/1.0 FTE Project Manager I, 1/1.0 FTE Senior Engineering Inspector, 1/1.0 FTE Senior Engineer III, and 3/3.0 FTE Senior Maintenance Workers. The Engineering Technician III position will support address the increased workload of permit required pond inspections and maintenance. The Planner III position will review and provide needed stormwater expertise, advanced technical analysis, support and recommendations on planning and development efforts during planning, pre-zoning and rezoning processes. The Project Manager I position will support the Tree Preservation and Planting Program and manage projects that support the tree planting goals of Virginia's Final Phase III Watershed Implementation Plan. The projects will be geared towards increasing tree canopy through street and landscape tree plantings, afforestation and reforestation, and assisting with outreach and education programs. The Senior Engineering Inspector position will be responsible for reviewing erosion and sediment control plans, reviewing project designs, understanding job specifications, inspecting County stormwater infrastructure, updating work orders and keeping a daily log of work performed on construction sites. The Senior Engineer III position will initiate flood mitigation projects, coordinate with property owners to address their flooding concerns, and execute flood mitigation project design and implementation services. The three Senior Maintenance Worker positions will form an additional crew that will be deployed into the field to perform maintenance on the storm drainage system throughout the County.

#### **Asset Management Program** **\$800,000**

An increase of \$800,000 in Operating Expenses will support a new Asset Management Program (AMP). Funding will support the acquisition of software, servers, and consultant services to migrate asset management and related work order management into the new system. This new system will meet the future expectations for both Stormwater and Wastewater divisions and optimize service delivery for the Department of Public Works and Environmental Services.

#### **Capital Equipment** **(\$130,000)**

Funding of \$652,000 in Capital Equipment, a decrease of \$130,000 from the FY 2022 Adopted Budget Plan, is included primarily associated with replacement equipment that has outlived its useful life and is critical to stormwater services activities. Replacement equipment includes: \$390,000 to replace two dump trucks that support all maintenance and emergency response programs and \$40,000 to replace three equipment trailers that support all maintenance and emergency response programs in transporting construction materials, light duty and snow removal equipment. New

equipment includes \$222,000 for the purchase of three new pickup trucks and one new utility truck to support the new positions in FY 2023.

**Capital Projects** **\$4,279,326**  
 Funding of \$65,879,740 in Capital Projects, an increase of \$4,279,326 from the FY 2022 Adopted Budget Plan, has been included in FY 2023 for priority stormwater capital projects.

**Changes to  
 FY 2022  
 Adopted  
 Budget Plan**

*The following funding adjustments reflect all approved changes in the FY 2022 Revised Budget Plan since passage of the FY 2022 Adopted Budget Plan. Included are all adjustments made as part of the FY 2021 Carryover Review, FY 2022 Mid-Year Review, FY 2022 Third Quarter Review, and all other approved changes through April 30, 2022.*

**Carryover Adjustments** **\$182,312,873**  
 As part of the *FY 2021 Carryover Review*, the Board of Supervisors approved funding of \$182,312,873 based on the carryover of unexpended project balances in the amount of \$179,413,809 and a net adjustment of \$2,899,064. This adjustment includes the carryover of \$1,312,110 in operating and capital equipment encumbrances, an increase of \$197,626 to Personnel Services to support a one-time compensation adjustment of \$1,000 for merit employees and \$500 for non-merit employees to be paid no later than November 2021, and an increase to capital projects of \$1,389,328. The adjustment to capital projects is based on the appropriation of the remaining operational savings of \$783,662, higher than anticipated revenues of \$304,634, revenues of \$203,600 collected through the land development process that will support tree preservation and planting projects in FY 2022, revenues of \$44,841 associated with dam and facility maintenance projects, miscellaneous revenues in the amount of \$45,652, and the appropriation of \$6,939 from the ending balance that was due to an FY 2021 audit adjustment.

**Mid-Year Adjustments** **(\$1,555)**  
 As part of the *FY 2022 Mid-Year Review*, the Board of Supervisors approved a decrease of \$1,555 due to an FY 2021 audit adjustment.

**Third Quarter Adjustments** **\$5,000,000**  
 As part of the *FY 2022 Third Quarter Review*, the Board of Supervisors approved an increase of \$5,000,000 to fully appropriate the available bond funding to support the construction of the new Stormwater/Wastewater Facility.

**Position Detail**

*The FY 2023 Adopted Budget Plan includes the following positions:*

<b>STORMWATER SERVICES – 208 Positions</b>			
<b>MSMD Administration (10 positions)</b>			
1	Director, Maintenance and SW	1	Safety Analyst I
1	HR Generalist II	1	Administrative Assistant IV
1	HR Generalist I	4	Administrative Assistants III
1	Safety Analyst II		
<b>IT – Director’s Office/Stormwater (1 position)</b>			
1	Network/Telecom. Analyst I		
<b>Finance – Wastewater and Stormwater (4 positions)</b>			
1	Financial Specialist IV	1	Financial Specialist I
1	Financial Specialist II	1	Administrative Assistant III



## Fund 40100: Stormwater Services

<b>Contracting Services/Material Support (5 positions)</b>			
1	Material Mgmt. Specialist III	1	Financial Specialist II
2	Contract Analysts I	1	Inventory Manager
<b>Dam Safety and Maintenance Projects/Projects and LID/Inspection and Maintenance (19 positions)</b>			
1	Public Works-Env. Serv. Manager	5	Engineering Technicians III [+1]
1	Engineer IV	2	Engineering Technicians II
1	Senior Engineer III	1	Project Manager II
3	Engineers III	2	Project Managers I
1	Ecologist III	1	Assistant Project Manager
1	Ecologist II		
<b>Field Operations (74 positions)</b>			
2	Env. Services Supervisors	3	Masons
1	Public Works-Env. Serv. Manager	1	Vehicle Maintenance Coordinator
2	Public Works-Env. Bus. Operations	5	Engineering Technicians III
2	Public Works-Env. Serv. Specialists	2	Engineering Technicians II
8	Senior Maintenance Supervisors	1	Carpenter II
5	Maintenance Supervisors	2	Equipment Repairers
2	Maintenance Crew Chiefs	1	Welder II
15	Senior Maintenance Workers [+3]	1	Welder I
10	Heavy Equipment Operators	1	Trades Supervisor
10	Motor Equipment Operators		
<b>Stormwater Infrastructure Branch (16 positions)</b>			
1	Public Works-Env. Serv. Manager	1	Senior Engineering Inspector [+1]
3	Engineers IV	2	Engineering Technicians II
2	Senior Engineers III [+1]	2	Engineering Technicians I
4	Engineers III	1	Project Manager I
<b>Transportation Infrastructure Branch (7 positions)</b>			
1	Engineer V	3	Project Managers I
1	Engineer IV	1	Engineering Technician II
1	Project Manager II		
<b>Stormwater Planning Division (56 positions)</b>			
1	Director, Stormwater Planning	1	Emergency Mgmt. Specialist III
1	Engineer V	1	Planner IV
4	Engineers IV	1	Planner III [+1]
1	Senior Engineer III	2	Landscape Architects III
9	Engineers III	1	Engineering Technician III
4	Project Managers II	1	Management Analyst II
2	Project Managers I	2	Code Specialists II
4	Ecologists IV	1	Financial Specialist II
5	Ecologists III	1	Financial Specialist I
3	Ecologists II	1	Contract Specialist II
2	Ecologists I	1	Assistant Contract Specialist
3	Project Coordinators	3	Administrative Assistants III
1	Public Works-Env. Serv. Manager		
<b>Urban Forestry (16 positions)</b>			
1	Director, Urban Forestry Division	3	Urban Foresters I
1	Urban Forester IV	1	Project Manager I [+1]
4	Urban Foresters III	1	Administrative Assistant II
5	Urban Foresters II		
+	Denotes New Position(s)		

**Performance  
Measurement  
Results**

The objective to receive no MS4 Permit violations related to inspection and maintenance of public and private stormwater management facilities was met in FY 2019, FY 2020, and FY 2021. It is expected that this objective will also be met in FY 2022 and FY 2023. The objective to update 100 percent of the Stormwater emergency action plans was met in prior years. It is expected that this trend will continue in both FY 2022 and FY 2023. Lastly, the objective to keep 100 percent of the commuter facilities operational for 365 days was met in prior years. It is expected that this goal will be met in FY 2022 and FY 2023.

Indicator	FY 2019 Actual	FY 2020 Actual	FY 2021 Estimate	FY 2021 Actual	FY 2022 Estimate	FY 2023 Estimate
MS4 permit violations received	0	0	0	0	0	0
Percent of Emergency Action Plans current	100%	100%	100%	100%	100%	100%
Percent of commuter facilities available 365 days per year	100%	100%	100%	100%	100%	100%

A complete list of performance measures can be viewed at <https://www.fairfaxcounty.gov/budget/fy-2023-adopted-performance-measures-pm>

# Fund 40100: Stormwater Services

## FUND STATEMENT

Category	FY 2021 Actual	FY 2022 Adopted Budget Plan	FY 2022 Revised Budget Plan	FY 2023 Advertised Budget Plan	FY 2023 Adopted Budget Plan
<b>Beginning Balance</b>	<b>\$78,402,156</b>	<b>\$6,939</b>	<b>\$90,244,247</b>	<b>\$0</b>	<b>\$0</b>
<b>Revenue:</b>					
Stormwater Service District Levy	\$85,394,610	\$87,175,738	\$87,175,738	\$94,393,055	\$94,393,055
Sale of Bonds <sup>1</sup>	0	0	93,000,000	0	0
Stormwater Local Assistance Fund (SLAF) Grant <sup>2</sup>	1,876,476	0	3,596,793	0	0
Tree Preservation/Planting Fund <sup>3</sup>	203,600	0	0	0	0
Miscellaneous	90,493	0	81,000	0	0
<b>Total Revenue</b>	<b>\$87,565,179</b>	<b>\$87,175,738</b>	<b>\$183,853,531</b>	<b>\$94,393,055</b>	<b>\$94,393,055</b>
<b>Total Available</b>	<b>\$165,967,335</b>	<b>\$87,182,677</b>	<b>\$274,097,778</b>	<b>\$94,393,055</b>	<b>\$94,393,055</b>
<b>Expenditures:</b>					
Personnel Services <sup>4</sup>	\$20,448,442	\$22,615,643	\$22,813,269	\$24,580,634	\$24,580,634
Operating Expenses	3,919,893	3,182,636	3,389,603	4,010,636	4,010,636
Recovered Costs	(1,832,157)	(2,129,955)	(2,129,955)	(2,129,955)	(2,129,955)
Capital Equipment	1,077,511	782,000	1,887,143	652,000	652,000
Capital Projects <sup>4</sup>	50,984,399	61,600,414	247,012,718	65,879,740	65,879,740
<b>Total Expenditures</b>	<b>\$74,598,088</b>	<b>\$86,050,738</b>	<b>\$272,972,778</b>	<b>\$92,993,055</b>	<b>\$92,993,055</b>
<b>Transfers Out:</b>					
General Fund (10001) <sup>5</sup>	\$1,125,000	\$1,125,000	\$1,125,000	\$1,400,000	\$1,400,000
<b>Total Transfers Out</b>	<b>\$1,125,000</b>	<b>\$1,125,000</b>	<b>\$1,125,000</b>	<b>\$1,400,000</b>	<b>\$1,400,000</b>
<b>Total Disbursements</b>	<b>\$75,723,088</b>	<b>\$87,175,738</b>	<b>\$274,097,778</b>	<b>\$94,393,055</b>	<b>\$94,393,055</b>
<b>Ending Balance<sup>6,7</sup></b>	<b>\$90,244,247</b>	<b>\$6,939</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Tax Rate Per \$100 of Assessed Value</b>	<b>\$0.0325</b>	<b>\$0.0325</b>	<b>\$0.0325</b>	<b>\$0.0325</b>	<b>\$0.0325</b>

<sup>1</sup> In FY 2022, Economic Development Authority (EDA) Bonds were issued to support the construction of a Stormwater/Wastewater Facility to consolidate functions and operations and maximize efficiencies between the Stormwater and Wastewater Divisions. As part of the *FY 2022 Third Quarter Review*, the EDA Bonds appropriation was increased to fully appropriate the available bond funding to support the construction of the new facility.

<sup>2</sup> Represents previously approved Virginia Department of Environmental Quality (VDEQ) Stormwater Local Assistance Fund (SLAF) grants to support stream and water quality improvement projects. An amount of \$1,876,476 was received in FY 2021 and an amount of \$3,596,793 is anticipated in FY 2022 and beyond.

<sup>3</sup> Reflects revenues collected through the land development process that will support tree preservation and planting projects in FY 2022.

<sup>4</sup> In order to account for revenues and expenditures in the proper fiscal year, audit adjustments were reflected as an increase of \$1,555.35 to FY 2021 Personnel Services expenditures to record expenditure accruals and an increase of \$389,278.17 to FY 2021 Capital Projects expenditures to record expenditure accruals. This impacted the amount carried forward resulting in a decrease of \$389,278.17 to the *FY 2022 Revised Budget Plan*. The projects affected by this adjustment were 2G25-006-000, Stormwater Regulatory Program, SD-000031, Stream & Water Quality Improvements, and SD-000033, Dam Safety and Facility Rehabilitation. The Annual Comprehensive Financial Report (ACFR) reflects all audit adjustments in FY 2021. Details of the audit adjustments were found in Attachment VI of the *FY 2022 Mid-Year Review*.

<sup>5</sup> Funding in the amount of \$1,400,000 is transferred to the General Fund to partially offset central support services supported by the General Fund, which benefit Fund 40100. These indirect costs include support services such as Human Resources, Purchasing, Budget and other administrative services.

<sup>6</sup> Capital projects are budgeted based on the total project costs. Most projects span multiple years, from design to construction completion. Therefore, funding for capital projects is carried forward each fiscal year, and ending balances fluctuate, reflecting the carryover of these funds.

## Fund 40100: Stormwater Services

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<sup>7</sup> The FY 2022 Adopted Budget Plan ending balance of \$6,939 was due to an adjustment made to FY 2020 and was appropriated as part of the *FY 2021 Carryover Review*.

## Fund 40100: Stormwater Services

### SUMMARY OF CAPITAL PROJECTS

Project	Total Project Estimate	FY 2021 Actual Expenditures	FY 2022 Revised Budget	FY 2023 Advertised Budget Plan	FY 2023 Adopted Budget Plan
Conveyance System Inspection/Development (2G25-028-000)	\$13,725,000	\$1,547,185.84	\$4,734,379.98	\$2,000,000	\$2,000,000
Conveyance System Rehabilitation (SD-000034)	65,034,135	6,858,021.91	10,922,648.48	7,000,000	7,000,000
Dam & Facility Maintenance (2G25-031-000)	30,194,841	5,511,833.19	7,422,312.42	5,000,000	5,000,000
Dam Safety and Facility Rehabilitation (SD-000033)	62,576,104	5,838,539.60	12,227,774.80	10,000,000	10,000,000
Debt Service for SW/WW Facility (2G25-117-000)	9,179,000	0.00	5,000,000.00	4,179,000	4,179,000
Emergency and Flood Response Projects (SD-000032)	36,686,091	1,432,074.25	14,457,916.30	7,000,000	7,000,000
Enterprise Asset Management-Work Order System (SD-000044)	2,400,000	0.00	1,000,000.00	1,400,000	1,400,000
Flood Prevention-Huntington Area-2012 (SD-000037)	41,750,000	204,250.20	2,660,024.24	0	0
Lake Accotink Dredging (SD-000041)	5,000,000	576,187.62	4,423,812.38	0	0
Laurel Hill Adaptive Reuse Infrastructure (SD-000038)	1,925,000	8,306.59	0.00	0	0
NVSWCD Contributory (2G25-007-000)	6,530,042	554,811.00	554,811.00	609,346	609,346
Occoquan Monitoring Contributory (2G25-008-000)	1,750,641	172,138.00	177,799.00	183,437	183,437
Scotts Run Stream Restoration (SD-000043)	151,358	151,357.99	0.00	0	0
Stormwater Allocation to Towns (2G25-027-000)	7,244,829	816,434.14	894,119.92	1,000,000	1,000,000
Stormwater Civil Penalties Fees (2G25-119-000)	185,750	0.00	185,750.00	0	0
Stormwater Facility (SD-000039)	101,515,000	1,985,385.95	93,412,475.41	0	0
Stormwater Proffers (2G25-032-000)	56,500	0.00	56,500.01	0	0
Stormwater Regulatory Program (2G25-006-000)	64,014,584	2,588,925.98	7,420,778.36	4,000,000	4,000,000
Stream & Water Quality Improvements (SD-000031)	255,588,016	22,533,970.99	80,322,038.93	23,507,957	23,507,957
Towns Grant Contribution (2G25-029-000)	4,805,976	176,548.01	906,583.17	0	0
Tree Preservation and Plantings (2G25-030-000)	308,916	28,427.87	232,993.36	0	0
<b>Total</b>	<b>\$710,621,783</b>	<b>\$50,984,399.13</b>	<b>\$247,012,717.76</b>	<b>\$65,879,740</b>	<b>\$65,879,740</b>



Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R2

List of All County Lands and Applicable  
Acreage on Which Nutrients Are Applied to  
More Than One Contiguous Acre and Status  
of Implementation of Nutrient Management  
Plans

VSMP Permit Number VA0088587  
9-30-2022

# NMP Annual Report - Appendix R2

# of Facilities/Fields: 174  
 Total Acreage: 1,038.10 acres  
 Acreage Covered: 1,038.10 acres  
 Percent Covered: 100.00%

Facility	NMP ID	Field Name	Acre	Longitude	Latitude	Expiration Date	NMP Completed
Alabama Drive Park	NMP-014-329	Field #1	1.48	-77.3998	38.9695	6/30/2024	Y
Alabama Drive Park	NMP-014-520	Field #3	1.41	-77.3999	38.9679	6/30/2024	Y
Annandale HS	NMP-018-171	Field #1	2.41	-77.2111	38.8227	11/11/2023	Y
Baron Cameron Park	NMP-023-292	Field #2	1.58	-77.3364	38.9750	6/30/2024	Y
Baron Cameron Park	NMP-023-330	Field #3	1.58	-77.3366	38.9761	6/30/2024	Y
Baron Cameron Park	NMP-023-333	Field #1	1.15	-77.3361	38.9740	6/30/2024	Y
Baron Cameron Park	NMP-023-334	Field #6	1.25	-77.3372	38.9749	6/30/2024	Y
Baron Cameron Park	NMP-023-335	Field #9	1.59	-77.3378	38.9777	6/30/2024	Y
Baron Cameron Park	NMP-023-336	Field #10	1.66	-77.3387	38.9776	6/30/2024	Y
Baron Cameron Park	NMP-023-522	Field #7	1.68	-77.3374	38.9762	6/30/2024	Y
Baron Cameron Park	NMP-023-523	Field #4	1.24	-77.3362	38.9774	6/30/2024	Y
Beulah Park	NMP-027-413	Field #2	1.52	-77.1554	38.7610	8/31/2023	Y
Beulah Park	NMP-027-414	Field #1	1.32	-77.1558	38.7616	8/31/2023	Y
Blake Lane Park	NMP-028-273	Field #2	1.76	-77.2937	38.8758	8/31/2023	Y
Braddock Park	NMP-031-484	Field #3	1.43	-77.4087	38.8265	6/30/2024	Y
Braddock Park	NMP-031-485	Field #4	1.45	-77.4085	38.8271	6/30/2024	Y
Braddock Park	NMP-031-487	Field #6	1.42	-77.4078	38.8283	6/30/2024	Y
Braddock Park	NMP-031-488	Field #1	1.44	-77.4106	38.8290	6/30/2024	Y
Braddock Park	NMP-031-489	Field #2	1.41	-77.4109	38.8280	6/30/2024	Y
Braddock Park	NMP-031-548	Field #5	1.43	-77.4072	38.8274	6/30/2024	Y
Burke Center	NMP-038-113	<Null>	1.36	-77.2776	38.7831	3/30/2025	Y
Burke Lake GC	NMP-039-300	<Null>	54.12	-77.3090	38.7646	6/3/2025	Y
Centre Ridge ES	NMP-049-210	<Null>	1.21	-77.4473	38.8258	5/29/2023	Y
Centreville HS	NMP-051-173	Field #1	2.39	-77.4089	38.8253	4/28/2025	Y
Chandon Park	NMP-052-525	Field #1	1.17	-77.3973	38.9593	6/30/2024	Y
Chantilly HS	NMP-053-175	Field #1	2.48	-77.4078	38.8786	4/28/2025	Y
Clarks Crossing Park	NMP-058-526	Fields #1 & #2	2.79	-77.2873	38.9224	6/30/2024	Y
Clermont Park	NMP-061-417	Field #4	1.29	-77.1046	38.7930	8/31/2023	Y
Colin Powell ES	NMP-064-354	<Null>	1.14	-77.4079	38.8468	5/29/2023	Y
Collingwood Park	NMP-065-422	Fields #2 & #4	1.62	-77.0533	38.7352	8/31/2023	Y
Collingwood Park	NMP-065-423	Fields #1 & #3	1.17	-77.0520	38.7351	8/31/2023	Y
Colvin Run ES	NMP-067-375	Field #1	1.13	-77.2655	38.9473	5/29/2023	Y
Colvin Run ES	NMP-067-386	Field #2	1.10	-77.2660	38.9476	5/29/2023	Y
Cub Run ES	NMP-071-442	Fields #3 & #4	1.68	-77.4581	38.8644	3/30/2025	Y
Cunningham Park	NMP-072-353	Field #1	Field #1	-77.2511	38.8916	8/31/2023	Y
Dowden Terrace Park	NMP-077-387	Field #1	1.08	-77.1281	38.8407	3/31/2024	Y
Dulles Corner Park	NMP-079-527	Field #1	2.03	-77.4276	38.9519	6/30/2024	Y
Dunn Loring Center	NMP-080-540	<Null>	1.49	-77.2276	38.8964	3/30/2025	Y
E.C. Lawrence Park	NMP-081-290	Field #1	1.36	-77.4359	38.8575	6/30/2024	Y
E.C. Lawrence Park	NMP-081-291	Field #4	1.73	-77.4384	38.8588	6/30/2024	Y
E.C. Lawrence Park	NMP-081-496	Field #6	1.39	-77.4387	38.8610	6/30/2024	Y
Eakin Community Park	NMP-083-388	Fields #1 & #2	2.66	-77.2399	38.8521	3/31/2024	Y
Edison HS	NMP-085-177	Field #1	2.22	-77.1316	38.7809	4/28/2025	Y
Falls Church HS	NMP-090-233	Field #1	1.63	-77.2094	38.8624	4/28/2025	Y
Flint Hill ES	NMP-091-611	Field #1	1.38	-77.2861	38.8966	5/29/2023	Y
Fort Hunt Park	NMP-098-424	<Null>	1.07	-77.0676	38.7179	8/31/2023	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	Expiration Date	NMP Completed
Franconia District	NMP-100-313	Field #3	1.65	-77.1624	38.7880	8/31/2023	Y
Franconia District	NMP-100-426	Field #1	1.57	-77.1629	38.7891	8/31/2023	Y
Franconia District	NMP-100-427	Field #2	1.54	-77.1628	38.7898	8/31/2023	Y
Franklin Farm Park	NMP-102-324	Field #2	1.00	-77.4159	38.9122	6/30/2024	Y
Fred Crabtree Park	NMP-105-295	Field #3	1.75	-77.3614	38.9126	6/30/2024	Y
Freedom Hill ES	NMP-106-653	<Null>	1.19	-77.2288	38.9110	3/30/2025	Y
Grand Hampton	NMP-112-616	Field #1	1.39	-77.3607	39.0064	6/30/2024	Y
Great Falls Grange	NMP-114-617	<Null>	1.53	-77.2873	38.9991	4/13/2023	Y
Great Falls Grange	NMP-114-618	Field #1 & #2	1.54	-77.2852	38.9992	6/30/2024	Y
Great Falls Nike	NMP-115-296	Field #8	1.56	-77.3286	38.9918	6/30/2024	Y
Great Falls Nike	NMP-115-535	Field #5	2.15	-77.3254	38.9905	6/30/2024	Y
Great Falls Nike	NMP-115-537	Field #7	1.59	-77.3287	38.9905	4/13/2023	Y
Greenbriar Park	NMP-117-325	Field #4	1.06	-77.4046	38.8671	6/30/2024	Y
Greenbriar Park	NMP-117-500	Field #3	1.38	-77.4036	38.8669	6/30/2024	Y
Greenbriar Park	NMP-117-502	Fields #1 & #6	1.84	-77.4051	38.8654	6/30/2024	Y
Greendale GC	NMP-119-302	<Null>	60.50	-77.1214	38.7731	3/31/2026	Y
Grist Mill Park	NMP-120-281	Field #6	1.76	-77.1135	38.7101	8/31/2023	Y
Grist Mill Park	NMP-120-431	Field #4	2.77	-77.1165	38.7095	8/31/2023	Y
Grist Mill Park	NMP-120-432	Field #3	2.16	-77.1151	38.7109	8/31/2023	Y
GW RecCenter	NMP-124-314	Field #2	1.50	-77.0991	38.7288	8/31/2023	Y
GW RecCenter	NMP-124-315	Field #1	1.63	-77.1001	38.7291	8/31/2023	Y
Hayfield SS	NMP-128-183	Field #1	2.53	-77.1411	38.7519	4/28/2025	Y
Herndon ES	NMP-129-011	<Null>	1.25	-77.3749	38.9755	5/29/2023	Y
Herndon HS	NMP-130-610	Field #1	1.97	-77.3753	38.9882	4/28/2025	Y
Hoes Road Park	NMP-135-283	Field #3	1.38	-77.1936	38.7622	5/31/2024	Y
Hoes Road Park	NMP-135-284	Field #4	1.70	-77.1933	38.7614	5/31/2024	Y
Hoes Road Park	NMP-135-460	Field #2	1.65	-77.1927	38.7623	5/31/2024	Y
Hoes Road Park	NMP-135-461	Field #1	1.81	-77.1917	38.7636	5/31/2024	Y
Idylwood Park	NMP-144-355	Field #1	1.27	-77.2130	38.8906	8/31/2023	Y
Jefferson GC	NMP-147-351	<Null>	43.23	-77.2152	38.8796	5/21/2025	Y
Jefferson HS	NMP-148-206	Field #1	2.25	-77.1691	38.8203	4/28/2025	Y
Key MS	NMP-153-041	Field #2	1.06	-77.1606	38.7814	3/30/2025	Y
Key MS	NMP-153-042	Field #1	1.67	-77.1623	38.7819	3/30/2025	Y
Kilmer MS	NMP-154-043	Field #1	1.67	-77.2239	38.9056	3/30/2025	Y
Kilmer MS	NMP-154-044	Field #2	1.01	-77.2249	38.9059	3/30/2025	Y
Lake Braddock Park	NMP-160-285	Field #1	1.83	-77.2709	38.8065	5/31/2024	Y
Lake Braddock Park	NMP-160-286	Field #2	1.43	-77.2707	38.8076	5/31/2024	Y
Lake Braddock SS	NMP-161-184	Field #1	2.53	-77.2629	38.8038	4/28/2025	Y
Lake Fairfax Park	NMP-162-297	Field #2	1.67	-77.3188	38.9563	6/30/2024	Y
Lake Fairfax Park	NMP-162-337	Fields #8 & #9	5.25	-77.3121	38.9599	6/30/2024	Y
Lake Fairfax Park	NMP-162-338	Field #7	1.69	-77.3204	38.9611	6/30/2024	Y
Lake Fairfax Park	NMP-162-339	Field #6	1.69	-77.3200	38.9600	6/30/2024	Y
Lake Fairfax Park	NMP-162-538	Field #5	1.40	-77.3193	38.9592	6/30/2024	Y
Lake Fairfax Park	NMP-162-541	Field #3	1.41	-77.3190	38.9575	6/30/2024	Y
Lakeside Park	NMP-165-463	Fields #1 & #2	1.89	-77.2856	38.8061	5/31/2024	Y
Langley Fork Park	NMP-167-274	Field #4	1.81	-77.1524	38.9467	8/31/2023	Y
Langley Fork Park	NMP-167-305	Field #3	1.76	-77.1552	38.9483	8/31/2023	Y
Langley Fork Park	NMP-167-359	Field #1	1.48	-77.1544	38.9465	8/31/2023	Y
Langley Fork Park	NMP-167-360	Field #2	1.08	-77.1544	38.9474	8/31/2023	Y
Langley HS	NMP-168-237	Field #1	1.05	-77.1663	38.9528	4/28/2025	Y
Langley HS	NMP-168-238	Field #2	1.04	-77.1643	38.9520	4/28/2025	Y
Langley HS	NMP-168-609	Field #1	2.05	-77.1645	38.9513	4/28/2025	Y
Larry Graves Park	NMP-170-306	Field #1	1.69	-77.1703	38.8766	4/18/2024	Y
Laurel Hill GC	NMP-172-303	<Null>	81.00	-77.2469	38.7144	3/1/2024	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	Expiration Date	NMP Completed
Laurel Hill Park	NMP-173-465	Field #3	4.14	-77.2338	38.7112	4/19/2024	Y
Lee District RecCenter	NMP-175-436	Fields #2 & #7	2.53	-77.1041	38.7742	8/31/2023	Y
Lee District RecCenter	NMP-175-437	Fields #1 & #6	2.36	-77.1040	38.7752	8/31/2023	Y
Lee HS	NMP-177-186	Field #1	2.32	-77.1704	38.7787	4/28/2025	Y
Lewinsville Park	NMP-181-307	Field #4	1.34	-77.1920	38.9293	8/31/2023	Y
Lincoln Lewis-Vannoy Park	NMP-183-506	<Null>	1.98	-77.3767	38.8314	6/30/2024	Y
Madison HS	NMP-192-187	Field #1	2.29	-77.2797	38.8975	4/28/2025	Y
Manchester Lakes Park	NMP-193-282	Field #1	1.51	-77.1503	38.7693	8/31/2023	Y
Manchester Lakes Park	NMP-193-316	Field #2	1.70	-77.1492	38.7695	8/31/2023	Y
Marshall HS	NMP-195-188	Field #1	2.45	-77.2123	38.9042	4/28/2025	Y
Marshall Road ES	NMP-196-074	Field #1	1.94	-77.2651	38.8819	3/30/2025	Y
Mason District Park	NMP-198-308	Field #4	1.76	-77.1718	38.8352	3/31/2024	Y
Mason District Park	NMP-198-393	Field #2	1.40	-77.1723	38.8342	3/31/2024	Y
McLean HS	NMP-200-190	<Null>	1.93	-77.1858	38.9216	4/28/2025	Y
McLean HS	NMP-200-245	Field #1	1.41	-77.1832	38.9224	4/28/2025	Y
McLean Youth Soccer	NMP-201-349	<Null>	2.54	-77.2308	38.9378	8/31/2023	Y
McNaughton Park	NMP-203-444	Field #4	1.55	-77.1294	38.7286	8/31/2023	Y
MLK Jr Park	NMP-204-448	Fields #1 & #2	2.00	-77.0832	38.7375	8/31/2023	Y
Mt Vernon HS	NMP-210-214	Field #1	2.46	-77.0927	38.7248	4/1/2025	Y
Muddy Hole Park	NMP-212-317	Field #2	1.47	-77.1138	38.7426	8/31/2023	Y
Newington Heights Park	NMP-215-288	Field #1	1.87	-77.2381	38.7255	5/31/2024	Y
Nottoway Park	NMP-217-368	Field #2	1.28	-77.2775	38.8841	8/31/2023	Y
Nottoway Park	NMP-217-369	Field #3	1.52	-77.2773	38.8830	8/31/2023	Y
Nottoway Park	NMP-217-371	Field #6	2.55	-77.2730	38.8831	8/31/2023	Y
Oak Marr GC	NMP-219-350	<Null>	52.71	-77.3143	38.8784	2/1/2027	Y
Oakton HS	NMP-222-191	Field #1	2.22	-77.2819	38.8811	4/28/2025	Y
Oakton HS	NMP-222-247	Field #2	1.26	-77.2809	38.8810	4/28/2025	Y
Olney Park	NMP-224-373	Fields #1 & #2	1.25	-77.1921	38.9152	8/31/2023	Y
Pine Ridge Park	NMP-230-279	Field #5	1.65	-77.2281	38.8530	3/31/2024	Y
Pinecrest GC	NMP-232-352	<Null>	29.50	-77.1639	38.8281	3/31/2026	Y
Pleasant Valley GC	NMP-233-601	<Null>	76.50	-77.4759	38.8876	2/24/2027	Y
Pohick Estates Park	NMP-236-450	Field #1	1.14	-77.2000	38.7193	8/31/2023	Y
Popes Head Park	NMP-237-468	Field #3	1.80	-77.3489	38.8132	5/31/2024	Y
Popes Head Park	NMP-237-469	Field #2	1.67	-77.3496	38.8138	5/31/2024	Y
Popes Head Park	NMP-237-470	Field #1	1.45	-77.3503	38.8145	5/31/2024	Y
Poplar Ford Park	NMP-999-002	Field #2	2.70	-77.5048	38.8368	8/10/2023	Y
Poplar Ford Park	NMP-999-003	Field #3	3.20	-77.5048	38.8368	8/10/2023	Y
Poplar Ford Park	NMP-999-004	Field #4	1.60	-77.5048	38.8368	8/10/2023	Y
Poplar Ford Park	NMP-999-005	Field #5	1.50	-77.5048	38.8368	8/10/2023	Y
Poplar Tree Park	NMP-239-507	Field #5	2.04	-77.4106	38.8610	6/30/2024	Y
Poplar Tree Park	NMP-239-511	Field #1	1.45	-77.4075	38.8600	6/30/2024	Y
Poplar Tree Park	NMP-239-514	Field #4	1.61	-77.4111	38.8598	6/30/2024	Y
Robinson SS	NMP-245-195	Field #1	2.70	-77.3065	38.8179	4/28/2025	Y
Robinson SS	NMP-245-216	Field #2	2.21	-77.3051	38.8183	4/27/2025	Y
Robinson SS	NMP-245-251	Field #2	2.46	-77.3079	38.8178	4/28/2025	Y
Rolling Valley West Park	NMP-248-318	Field #3	1.48	-77.2680	38.7727	5/31/2024	Y
Rolling Valley West Park	NMP-248-472	Field #1	1.69	-77.2660	38.7733	5/31/2024	Y
Roundtree Park	NMP-250-311	Field #2	1.09	-77.1904	38.8529	4/18/2024	Y
South County HS	NMP-257-196	Field #1	2.51	-77.2398	38.7200	4/28/2025	Y
South County HS	NMP-257-256	<Null>	1.70	-77.2424	38.7206	4/28/2025	Y
South County HS	NMP-257-258	<Null>	1.88	-77.2406	38.7216	4/28/2025	Y
South County HS	NMP-258-255	<Null>	1.63	-77.2434	38.7217	4/28/2025	Y
South Lakes HS	NMP-259-197	Field #1	2.49	-77.3413	38.9343	4/28/2025	Y
South Lakes Park	NMP-260-340	Field #1	1.55	-77.3557	38.9394	6/30/2024	Y

Facility	NMP ID	Field Name	Acres	Longitude	Latitude	Expiration Date	NMP Completed
South Run Rec Center	NMP-261-322	Field #3	1.79	-77.2740	38.7511	5/31/2024	Y
South Run Rec Center	NMP-261-478	Field #2	1.26	-77.2716	38.7495	5/31/2024	Y
South Run Rec Center	NMP-261-480	Field #1	1.90	-77.2721	38.7510	5/31/2024	Y
Stratton Woods Park	NMP-269-341	Field #2	1.45	-77.3844	38.9424	6/30/2024	Y
Stratton Woods Park	NMP-269-547	Field #3	2.11	-77.3852	38.9416	6/30/2024	Y
Stringfellow Park	NMP-270-327	Field #2	1.53	-77.4014	38.8466	6/30/2024	Y
Stringfellow Park	NMP-270-328	Field #3	1.39	-77.4011	38.8477	6/30/2024	Y
Sully Highlands Park	NMP-272-517	Field #5	2.24	-77.4263	38.9201	6/30/2024	Y
Twin Lakes GC	NMP-281-301	<Null>	356.70	-77.4039	38.8211	2/1/2026	Y
Wakefield	NMP-286-405	Field #2	1.32	-77.2259	38.8141	3/31/2024	Y
Wakefield	NMP-286-410	Fields #3, #4, & #6	1.53	-77.2257	38.8154	3/31/2024	Y
Wakefield	NMP-286-410	Fields #3, #4, & #6	1.46	-77.2256	38.8160	3/31/2024	Y
Waples Mill ES	NMP-288-260	<Null>	1.57	-77.3440	38.8757	3/30/2025	Y
West Potomac HS	NMP-291-261	<Null>	1.06	-77.0746	38.7735	4/28/2025	Y
West Potomac HS	NMP-291-608	Field #1	1.99	77.0746	38.7744	4/28/2025	Y
West Springfield ES	NMP-292-153	Field #2	1.65	-77.2207	38.7691	3/30/2025	Y
West Springfield HS	NMP-293-223	Field #1	2.17	-77.2404	38.7839	4/28/2025	Y
Winterset Varsity Park	NMP-304-412	Field #1	1.48	-77.2413	38.8396	3/31/2024	Y
Wolf Trails Park	NMP-305-382	Field #1	1.37	-77.2666	38.9277	8/31/2023	Y
Wolftrap ES	NMP-306-166	<Null>	1.07	-77.2652	38.9178	3/30/2025	Y



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List of Illicit Discharges Identified, the Source, a Description of Follow-Up Activities and Whether the Illicit Discharge Has Been Eliminated

VSMP Permit Number VA0088587  
9-30-2022

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From July 1, 2021 to June 30, 2022, SWPD identified 82 confirmed illicit discharges to the County's MS4. Three confirmed illicit discharge cases were referred by the County's Dry Weather Screening (DWS) Program. SWPD also completed two investigations that were ongoing when the previous reporting year ended, denoted by an asterisk (\*) next to the IDID number.

<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-1949444*	Fats, oils and grease (FOG)	Grease Bin	VA Department of Environmental Quality was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1956838*	Fats, oils and grease (FOG)	Grease Interceptor	Wastewater Treatment Division was notified. A Notice of Violation was issued, and a civil penalty was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1959297	Sanitary sewage	Apartments	VA Department of Environmental Quality was notified. Department of Code Compliance was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1961512	Sediment	Private water lateral break	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1961516	Paint	Single family home	Maintenance & Stormwater Management Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1962727	Unconfirmed	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection required.	Yes
IDID-1964167	Pool plaster	Pool contractor	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-1964367	Carpet Cleaning Waste	Carpet cleaning company	No referral needed. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes
IDID-1964696	Dumped trash / dumpster	Grocery store	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1966631	Building Material	Townhome	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1966938	Gravel & Sand	Materials Gravel Plant	VA Department of Environmental Quality was notified. VA Department of Transportation was notified. The discharge was determined to be authorized under a state permit.	Yes
IDID-1968593	Sanitary sewage	Single family home	VA Department of Environmental Quality was notified. Department of Code Compliance was notified. Wastewater Collections Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1968717	Concrete Material	Industrial Park	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1968723	Paint	Office Building	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1969937	Fats, oils and grease (FOG)	Restaurant	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-1970506	Paint	Single family home	VA Department of Environmental Quality was notified. Fire and Rescue Department was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1970795	Dumped plant material	Single family home	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1972091	Sanitary sewage	Public School	VA Department of Environmental Quality was notified. Fairfax County Public Schools was notified. Wastewater Collections Division was notified. Transitory discharge. No re-inspection required.	Yes
IDID-1972790	Paint	Single family home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1974623	Sediment	Single family home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1977095	Paint	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection required.	Yes
IDID-1977183	Unconfirmed	Unconfirmed	VA Department of Environmental Quality was notified. Fire and Rescue Department was notified. Transitory discharge, source unconfirmed.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-1978487	Sanitary sewage	Apartments & Retail Stores	VA Department of Environmental Quality was notified. Maintenance & Stormwater Management Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1980087	Sanitary sewage	Shopping Center	Wastewater Collections Division was notified. Transitory discharge. No re-inspection required.	Yes
IDID-1980138	Litter and floatables	Townhomes	No referral needed. Transitory discharge, source unconfirmed.	Yes
IDID-1980429	Swimming pool discharge	Single family home	No referral needed. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes
IDID-1980750	Sediment	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed.	Yes
IDID-1980760	Sanitary sewage	Restaurant	Industrial Waste Section was notified. Fairfax County Health Department was notified. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes
IDID-1981284	Fats, oils and grease (FOG)	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection required.	Yes
IDID-1981338	Sediment	Road Construction	VA Department of Environmental Quality was notified. VA Department of Transportation was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1983507	Litter and floatables	Shopping Center	No referral needed. Intermittent discharge, source unconfirmed. No re-inspection required.	Yes



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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-1984089	Sanitary sewage	Convenience Store	VA Department of Environmental Quality was notified. Fairfax County Health Department was notified. Department of Code Compliance was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1984201	Unconfirmed	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1985343	Litter and floatables	Apartments & Retail Stores	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1989090	Sanitary sewage	Sewer Main	VA Department of Environmental Quality was notified. Wastewater Collections Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1989402	Asphalt	Paving	No referral needed. Transitory discharge. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1990498	Vehicle wash with detergent	Industrial Park	Fairfax County's Dry Weather Screening Program reported referred location. No referral needed. Intermittent discharge, likely multiple sources. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1990718	Chemicals	Powerwashing	No referral needed. A Corrective Action Notice was issued.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-1990939	Dumped plant material	Single family home	No referral needed. Transitory discharge. No re-inspection required.	Yes
IDID-1994913	Fats, oils and grease (FOG)	Shopping Center	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1995841	Fats, oils and grease (FOG)	Restaurant	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-1996692	Sanitary sewage	Apartments	No referral needed. Transitory discharge. No re-inspection required.	Yes
IDID-1997444	Unconfirmed	Unconfirmed	VA Department of Environmental Quality was notified. VA Department of Transportation was notified. Transitory discharge, source unconfirmed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2000623	Paint	Single family home	No referral needed. Transitory discharge, source unconfirmed. No re-inspection required.	Yes
IDID-2004182	Sediment	Excavation	VA Department of Transportation was notified. Transitory discharge. No re-inspection required.	Yes
IDID-2004649	Sediment	Water main break	VA Department of Environmental Quality was notified. Fairfax Water was notified. Fairfax County Park Authority was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2006405	Salt	Office Building	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-2006539	Salt	Business Park	No referral needed. A Notice of Violation was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2006919	Salt	Shopping Center	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2007890	Sediment	Water main break	Fairfax Water was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2010317	Unconfirmed	Unconfirmed	No referral needed. Transitory discharge, source unconfirmed. No re-inspection required.	Yes
IDID-2010932	Diesel Fuel	Unconfirmed	Fire and Rescue Department was notified. Transitory discharge, source unconfirmed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2011521	Salt	Park & Ride Lot	Maintenance & Stormwater Management Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2011547	Paint	Townhomes	No referral needed. Transitory discharge. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2012018	Litter and floatables	Apartments & Retail Stores	Solid Waste Management Program was notified. Operation Stream Shield was notified. No re-inspection required.	Yes
IDID-2014087	Tile Cutting Wastewater	Single family home	No referral needed. Transitory discharge. No re-inspection required.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-2014088	Sediment	Water main break	VA Department of Environmental Quality was notified. Fairfax Water was notified. Transitory discharge. No re-inspection required.	Yes
IDID-2014272	Salt	Office Building	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2015573	Heating Oil	Single family home	VA Department of Environmental Quality was notified. Fire and Rescue Department was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2017414	Chemicals	Unconfirmed	VA Department of Environmental Quality was notified. Fire and Rescue Department was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2018402	Granite Cutting Wastewater	Industrial Park	Wastewater Treatment Division was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2020587	Animal waste	Townhomes	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2020589	Litter and floatables	Townhomes	Operation Stream Shield was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2020739	Sediment	Single family home	No referral needed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-2020952	Fats, oils and grease (FOG)	Shopping Center	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2021051	Salt	Shopping Center	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2021793	Sand	Golf Course	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2021912	Vehicle wash with detergent	Auto Repair Shop	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2022114	Paint	Single family home	No referral needed. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes
IDID-2022120	Paint	Single family home	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2028545	Potable Water	Water main break	Fairfax County's Dry Weather Screening Program reported referred location. Fairfax Water was notified. This is an open investigation.	No
IDID-2028557	Potable Water	Water main break	Fairfax County's Dry Weather Screening Program reported referred location. Fairfax Water was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2029113	Carpet Cleaning Waste	Carpet cleaning company	No referral needed. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes



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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-2030114	Tile Mortar	Construction	No referral needed. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes
IDID-2030119	Cement	Construction	VA Department of Transportation was notified. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2030551	Construction Debris	Equipment Washing	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2031706	Sanitary sewage	Restaurant	Wastewater Collections Division was notified. Wastewater Treatment Division was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2031710	Dumped trash / dumpster	Community	Solid Waste Management Program was notified. Operation Stream Shield was notified. Source unconfirmed. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2032785	Hydroseed Fertilizer	Single family home build	Land Development Service was notified. Health Department was notified. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes
IDID-2038368	Sediment	Water main break	No referral needed. Transitory discharge. No re-inspection required.	Yes
IDID-2038380	Dumped plant material	Townhomes	No referral needed. Transitory discharge. No re-inspection required.	Yes

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<b>IDID Number</b>	<b>Type</b>	<b>Source</b>	<b>Follow-Up Activities</b>	<b>Discharge Eliminated? (Yes / No)</b>
IDID-2038391	Fats, oils and grease (FOG)	Equipment Washing	No referral needed. A Corrective Action Notice was issued. Transitory discharge. No re-inspection required.	Yes
IDID-2038819	Building Material	Townhome	No referral needed. Transitory discharge, source unconfirmed. No re-inspection required.	Yes
IDID-2039335	Swimming pool discharge	Swimming School	No referral needed. A Corrective Action Notice was issued. SWPD re-inspected to confirm cleanup and illicit discharge eliminated.	Yes

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# Appendix R4

A List of Spills, the Source (Identified To The Best of the Permittee's Ability), and a Description of Follow-Up Activities Taken

VSMP Permit Number VA0088587  
9-30-2022

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From July 1, 2021, to June 30, 2022, spill response personnel responded to 9 spills that had the potential to discharge into the MS4. The investigations are summarized below.

<b>Date</b>	<b>Spill</b>	<b>Source</b>	<b>Follow-up Activities Taken</b>
07/29/21	Fuel Oil, approximately 25 gallons	Accidental release	Spill was mitigated spill by placing absorbent down to prevent any further contamination. Fire service completed clean-up. DEQ was notified.
09/05/21	Fuel Oil, approximately 50 gallons	Accidental release	Spill was mitigated spill by placing booms to prevent any further contamination. Towing company completed clean-up. DEQ was notified.
09/11/21	Fuel Oil, unknown amount	Accidental release	Cleanup was conducted by responsible party. DEQ was notified.
10/15/21	Fuel Oil, approximately 25 gallons	Accidental release	Contractor conducted cleanup of the site. DEQ was notified.
01/22/22	Fuel Oil, approximately 100 gallons	Accidental release	Responsible party and contractor completed clean-up. DEQ was notified.
01/24/22	Fuel Oil, approximately 275 gallons	Accidental release	Responsible party and contractor completed clean-up.
03/16/22	Fuel Oil, unknown amount	Accidental release	Spill was mitigated spill by placing pads and booms to mitigate and capture any possible product. Fire service completed clean-up. DEQ was notified.
04/24/22	Fuel Oil, unknown amount	Accidental release	Booms were placed and responsible party and contractor completed clean-up. DEQ was notified.
05/28/22	Fuel Oil, unknown amount	Accidental release	Responsible party and contractor completed clean-up.

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# Appendix R5

List of Industrial and High Risk Runoff Facilities Inspected During the Reporting Period

VSMP Permit Number VA0088587  
9-30-2022



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Fairfax County has established guidelines by which Stormwater Planning Division Code Specialists and Ecologists conduct inspections of points of connection to the Fairfax County municipal separate storm sewer system (MS4) and outdoor activities associated with industrial and high risk runoff (IHRR) facilities located within Fairfax County’s regulated MS4 service area. At a minimum, the County will inspect VPDES industrial stormwater permitted outfalls connected to its MS4 once every five years consistent with the MS4 permit requirement. Priority is given to facilities with the highest perceived risk, especially major automotive facilities. For more details, see “Standard Operating Procedures for Industrial and High Risk Runoff (IHRR) Program MS4 Point of Connection and Facility Inspections” (Appendix P9 of the Program Plan).

From July 1, 2021 to June 30, 2022, the County evaluated 128 facilities on its list of potential IHRR facilities. The evaluations are listed below. Of the 128 reported evaluations, the County inspected the points of connection to the MS4 from 53 facilities in the regulated MS4 service area; these facilities are distinguished below with bold facility ID numbers. The remaining 78 facilities were found to be closed, moved outside the County, or not having industrial or high risk activities; those facilities will be removed from the inspection program as the County continues to refine its facility list.

IHRR Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR017109509	N.A.	541103	Convenience Stores	9/8/2021
<b>IHR017108797</b>	N.A.	554101	Service Stations-Gasoline	9/8/2021
IHR099109347	N.A.	344403	Sheet Metal Fabricators (Mfrs)	9/24/2021
<b>IHR099106500</b>	N.A.	753201	Automobile Body-Repairing	9/24/2021
IHR099108056	N.A.	754901	Wrecker Service	9/24/2021
IHR099106491	N.A.	753701	Transmissions-Automobile	9/24/2021
<b>IHR013108970</b>	N.A.	554101	Service Stations-Gasoline	9/27/2021
IHR008310441	N.A.	175203	Floor Laying Refinishing	9/27/2021
IHR099110357	N.A.	734916	Chimney	9/29/2021
<b>IHR099108268</b>	N.A.	553123	Tire-Dealers-Retail	9/29/2021
<b>IHR017109337</b>	N.A.	553123	Tire-Dealers-Retail	9/29/2021
<b>IHR099307767</b>	N.A.	754201	Auto Repair	10/20/2021
IHR099309463	N.A.	753801	Automobile Repairing	10/20/2021
<b>IHR099307995</b>	N.A.	753813	Trailers-Repairing	10/20/2021
IHR099310249	N.A.	753813	Trailers-Repairing	10/20/2021
IHR034309553	N.A.	509312	Recycling Centers (Whls)	10/21/2021
IHR034308068	N.A.	272101	Publishers-Magazine (Mfrs)	10/21/2021
IHR034302784	N.A.	328101	Granite Products-Manufacturers	10/21/2021
IHR034308992	N.A.	152103	General Contractors	10/21/2021

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IHRR Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR034309136	N.A.	173101	Electric Contractors	10/21/2021
IHR034308286	N.A.	421401	Movers	10/21/2021
IHR044106879	N.A.	511207	Business Forms	10/21/2021
IHR034409290	N.A.	175203	Floor Laying Refinishing	10/21/2021
IHR034305731	N.A.	504613	Shelving (Whls)	10/21/2021
<b>IHR099309778</b>	N.A.	753801	Automobile Repairing	10/25/2021
IHR099309135	N.A.	753201	Automobile Body-Repairing	10/25/2021
<b>IHR055206504</b>	N.A.	554101	Service Stations-Gasoline	10/27/2021
IHR055208289	N.A.	753801	Automobile Repairing	10/27/2021
IHR033208636	N.A.	753834	Ignition Interlock Devices-Install & Svc	10/28/2021
IHR033204284	N.A.	571236	Cabinets	10/28/2021
IHR033208636	N.A.	753834	Ignition Interlock Devices-Install	10/28/2021
IHR034308150	N.A.	239502	Patches (Mfrs)	10/28/2021
IHR055209474	N.A.	581208	Restaurants	10/28/2021
<b>IHR045106850</b>	N.A.	554101	Service Stations-Gasoline	10/28/2021
<b>IHR055305936</b>	N.A.	554101	Service Stations-Gasoline	11/30/2021
<b>IHR055306730</b>	N.A.	554101	Service Stations-Gasoline	11/30/2021
IHR055310383	N.A.	174101	Masonry Contractors	12/2/2021
IHR055308591	N.A.	753801	Automobile Repairing	12/2/2021
<b>IHR099106925</b>	N.A.	753801	Automobile Repairing	12/6/2021
<b>IHR099107027</b>	N.A.	753801	Auto Body Repair	12/6/2021
<b>IHR099107023</b>	N.A.	753801	Automobile Repairing	12/20/2021
<b>IHR099105792</b>	N.A.	753801	Automobile Repairing	12/20/2021
<b>IHR099105810</b>	N.A.	753801	Automobile Repairing	12/20/2021
<b>IHR099107026</b>	N.A.	753801	Automobile Repairing	12/20/2021
<b>IHR099106744</b>	N.A.	753201	Automobile Body-Repairing	12/20/2021
<b>IHR099107024</b>	N.A.	553113	Automobile Racing Car Equipment	12/20/2021
<b>IHR099107025</b>	N.A.	753801	Automobile Repairing	12/20/2021
IHR039408613	N.A.	762213	Satellite Equip	12/28/2021
IHR049209413	N.A.	421309	Trucking-Motor Freight	12/28/2021

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IHRR Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR049108133	N.A.	342304	Dry Wall Contractors Equip	12/28/2021
IHR049108329	N.A.	502309	Closets	12/28/2021
IHR049108960	N.A.	503204	Granite (Whls)	12/28/2021
IHR049110001	N.A.	751303	Truck Renting	12/28/2021
IHR049308950	N.A.	503204	Granite (Whls)	12/28/2021
IHR049308099	N.A.	421205	Delivery Service	12/28/2021
IHR049306704	N.A.	751303	Truck Renting	12/28/2021
IHR091106912	N.A.	421401	Movers	1/11/2022
IHR091105891	N.A.	421401	Movers	1/11/2022
IHR091109422	N.A.	421401	Movers	1/11/2022
IHR080210114	N.A.	274119	Multimedia (Mfrs)	1/11/2022
IHR080209321	N.A.	495302	Garbage Collection	1/11/2022
IHR081109402	N.A.	421401	Movers	1/11/2022
IHR051309005	N.A.	275202	Printers (Mfrs)	1/11/2022
IHR051309256	N.A.	421304	Trucking	1/11/2022
IHR040106611	N.A.	581230	Restaurants-Food Delivery	1/11/2022
IHR040106144	N.A.	421205	Delivery Service	1/11/2022
VPD099302822	Concrete GP	327301	Ready-Mixed Concrete-Manufacturers	1/14/2022
IHR108106996	N.A.	328101	Granite Products-Manufacturers	1/14/2022
IHR108108828	N.A.	422503	Storage-Household	1/14/2022
IHR108108909	N.A.	753801	Automobile Repairing	1/14/2022
IHR090207987	N.A.	421401	Movers	1/26/2022
IHR090409899	N.A.	503204	Granite (Whls)	1/26/2022
IHR099310145	N.A.	421401	Movers	1/26/2022
IHR099105707	N.A.	871137	Engineers-Structural	1/26/2022
IHR099106992	N.A.	328101	Granite Products-Manufacturers	1/26/2022
IHR079309370	N.A.	271101	Newspapers (Publishers/Mfrs)	1/26/2022
IHR030208762	N.A.	508443	Printer Cartridges (Whls)	1/26/2022
IHR030208946	N.A.	769915	Picture Framing	1/26/2022
IHR030110407	N.A.	734904	Window Cleaning	1/26/2022

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IHRR Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
IHR060308144	N.A.	762902	Appliances-Household-Major-Repairing	1/27/2022
<b>VPD118107042</b>	Concrete GP	327301	Ready-Mixed Concrete-Manufacturers	1/27/2022
IHR108108929	N.A.	421401	Movers	1/27/2022
<b>IHR080206993</b>	N.A.	328101	Granite Products-Manufacturers	1/28/2022
<b>IHR081107844</b>	N.A.	328101	Granite Products-Manufacturers	1/28/2022
IHR108100243	N.A.	328102	Marble Products-Natural-Manufacturers	2/3/2022
<b>IHR099108894</b>	N.A.	176109	Roofing Contractors	2/14/2022
IHR099109748	N.A.	753201	Automobile Body-Repairing	2/14/2022
<b>IHR099307838</b>	N.A.	753801	Automobile Repairing	2/23/2022
IHR098207029	N.A.	753701	Transmissions-Automobile	3/14/2022
IHR098206352	N.A.	753801	Automobile Repairing	3/14/2022
<b>IHR098206392</b>	N.A.	753801	Automobile Repairing	3/21/2022
<b>IHR099107028</b>	N.A.	753801	Automobile Repairing	3/21/2022
IHR099107921	N.A.	503204	Granite (Whls)	3/21/2022
<b>IHR099106121</b>	N.A.	753201	Automobile Body-Repairing	3/30/2022
IHR056210134	N.A.	271101	Newspapers (Publishers/Mfrs)	4/27/2022
<b>IHR012306226</b>	N.A.	554101	Service Stations-Gasoline	4/28/2022
<b>IHR012306675</b>	N.A.	753801	Automobile Repairing	4/28/2022
<b>IHR012306132</b>	N.A.	754201	Car Washing	4/28/2022
<b>IHR012108479</b>	N.A.	492298	Natural Gas Transmission	4/29/2022
IHR099306863	N.A.	753812	Truck-Repairing	5/3/2022
<b>IHR099307837</b>	N.A.	753801	Automobile Collision Repairing	5/3/2022
<b>IHR099310246</b>	N.A.	503204	Granite (Whls)	5/3/2022
<b>IHR099307839</b>	N.A.	753801	Automobile Repairing	5/4/2022
IHR099310252	N.A.	754203	Automobile Detail	5/4/2022
<b>IHR099307833</b>	N.A.	753801	Automobile Repairing	5/9/2022
<b>IHR099310244</b>	N.A.	Not found*	SIC Code Not Found*	5/9/2022
<b>IHR099306255</b>	N.A.	753802	Automobile Machine Shop Service	5/9/2022

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IHRR Facility ID	VPDES Permit Type (if applicable)	Primary SIC Code	Primary SIC Description	Inspection Date
<b>IHR099310255</b>	N.A.	Not found*	SIC Code Not Found*	5/11/2022
<b>IHR099310256</b>	N.A.	508427	Machinery-New (Whls)	5/13/2022
IHR099301846	N.A.	328101	Granite Products-Manufacturers	5/13/2022
IHR099310248	N.A.	Not found*	SIC Code Not Found*	5/13/2022
IHR099309463	N.A.	753801	Automobile Repairing	5/18/2022
IHR099310250	N.A.	Not found*	SIC Code Not Found*	5/18/2022
<b>IHR099307837</b>	N.A.	753801	Automobile Repairing	5/18/2022
<b>VPD118107040</b>	Concrete GP	327301	Ready-Mixed Concrete-Manufacturers	5/25/2022
<b>IHR099310242</b>	N.A.	177105	Concrete Contractors	5/25/2022
IHR034408618	N.A.	899999	Services Nec	6/7/2022
IHR034408332	N.A.	733403	Copying	6/7/2022
IHR034306343	N.A.	753812	Truck-Repairing	6/7/2022
<b>IHR034409907</b>	N.A.	177105	Concrete Contractors	6/7/2022
<b>IHR099310245</b>	N.A.	514937	Beverages (Whls)	6/10/2022
<b>IHR099105807</b>	N.A.	753201	Automobile Body-Repairing	6/27/2022
<b>IHR099105813</b>	N.A.	753801	Automobile Repairing	6/27/2022
<b>IHR099106497</b>	N.A.	753801	Automobile Repairing	6/27/2022
<b>IHR098205811</b>	N.A.	753201	Automobile Body-Repairing	6/29/2022
<b>IHR098206083</b>	N.A.	553111	Automobile Parts	6/29/2022
<b>IHR098206789</b>	N.A.	753801	Automobile Repairing	6/29/2022
<b>IHR098205452</b>	N.A.	328101	Granite Products-Manufacturers	5/11/2022

\*Facility was identified as IHRR by field observation of Fairfax County inspectors. The facility is not listed in the third-party vendor database used by Fairfax County to identify SIC codes.

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R6

Revised List of High Priority Municipal Facilities with a High Potential of Discharging Pollutants

VSMP Permit Number VA0088587  
9-30-2022



List of High Priority Municipal Facilities with a High Potential of Discharging Pollutants

<b>Fairfax County High Priority Municipal Facilities with a High Potential of Discharging</b>	<b>Facility Address</b>
Huntley Meadows Maintenance Facility	6901 S. Kings HWY, Alexandria, VA 22310
Wakefield Park Maintenance Facility	8100 Braddock Rd. Annandale, VA 22003
Oak Marr Maintenance Facility	3200 Jermantown Rd, Oakton, VA 22124
Fred's Oak (Robert P. McMath Center)	6000 Freds Oak Rd. Burke, VA 22015
Burke Lake Maintenance Facility	10401 Burke Lake Rd, Fairfax Station, VA 22039
Lake Fairfax Maintenance Facility	1410 Hunter Mill Rd. Reston, VA 20190
Greenspring Gardens	4601 Green Spring Rd, Alexandria, VA 22312
Pinecrest Maintenance Facility	4531 Braddock Rd. Alexandria, VA 22312
Jefferson District Maintenance Facility	7900 Lee Hwy. Falls Church, VA 22042
Annandale Maintenance Facility	4030 Hummer Rd. Annandale, VA 22003
Greendale Maintenance Facility	6700 Telegraph Rd. Alexandria, VA 22310
Pleasant Valley Maintenance Facility	4715 Pleasant Valley Rd. Chantilly, VA 20151
Twin Lakes Maintenance Facility	6201 Union Mill Rd. Clifton, VA 20124
Flatlick Maintenance Facility	4501 Brookfield Corporate Dr. Chantilly, VA 20151
Maintenance & Stormwater Management Division	10635 West Dr. Fairfax, VA 22030
Central Maintenance Facility	5414 Ladue Ln. Fairfax, VA 22030
Dulles Maintenance Facility	4450 Upper Cub Run Drive Chantilly, VA 20151
Lake Accotink Park Maintenance Facility	7500 Accotink Park Rd, Annandale, VA 22003
Frying Pan Farm Park	2739 West Ox Rd, Herndon, VA 20171
Laurel Hill Golf Course and Maintenance Facility	9105 Hooes Road, Lorton, VA 22079
Woodson High School	9525 Main St, Fairfax, VA 22031

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R7

Public Education and Participation Program Effectiveness Overview

VSMP Permit Number VA0088587  
9-30-2022

Fairfax County 2022 MS4 Program Plan and Annual Report  
Appendix R7

During the 2022 reporting period, Fairfax County supported the Northern Virginia Clean Water Partners Only Rain Down the Drain campaign, a regional stormwater education campaign. The campaign uses radio advertising, online advertising and cable TV advertising to educate the public about preventing water pollution. The campaign includes several television ads to help residents visualize water pollution, and includes pollution prevention messages related to pet waste, motor oil, and fertilizer.

During July 2022, a survey was conducted of 500 northern Virginia residents to measure the effectiveness of the campaign. Twenty-eight percent of the respondents recalled seeing the advertisements on TV, Facebook, or Twitter. This is significantly higher than the 2020 respondents who only twenty-two percent recalled the ad. Of those respondents who recalled the ads, forty-two percent state they now pick up their pet waste more often, thirty-seven who percent state they plan to fertilize fewer times per year, and twelve percent are more careful with motor oil.

Social media was added to the campaign to reach more residents

<b>Summary of Northern Virginia Clean Water Partners Regional Stormwater Education Campaign</b>	
<b>Television Ads</b>	
Number of views reached	820,154
<b>Social Media</b>	
Post Engagements (Facebook & Twitter)	29,216
Post Link Clicks (Facebook & Twitter)	12,740
<b>Annual Survey Results</b>	
Number of residents surveyed	500
Number of survey respondents that recall seeing the Only Rain Down the Storm Drain logo	66%
Number of survey respondents that recalled seeing the TV ads	28%
<b>Those who saw the ads made the following behavior changes:</b>	
Pick up pet waste more often	42%
Fertilize fewer times per year	37%
More careful with motor oil	12%
Have heard of opportunities to participate in water quality activities	24%
Felt confident that they would know where to report potential water pollution	24%
Leave their grass clippings on the lawn	28%
Sweep or blow grass clippings back into the lawn from the street.	54%
Wash their vehicle at home	43%

\*Estimated viewership numbers for TV ads; can include viewers who viewed the ad more than once.

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R8

List of County's Public Outreach and  
Education Activities and the Estimated  
Number of Individuals Reached through the  
Activities

VSMP Permit Number VA0088587  
9-30-2022

The MS4 Public Education and Participation Team meets at least once a year with the partners to assess the current outreach efforts. Additional meetings may take place to improve existing outreach or develop new outreach. Below is a summary of outreach and education activities and estimated number of individuals reached for each of the ten messages required in Part I.B.2.j)1) of the permit. The new programs are highlighted in blue.

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)									
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts	
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Storm Drain Marking Program	9,569	Households	X	X		X	X	X	X	X		
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Storm Drain Markers	3,761	Number Distributed	X	X		X	X	X	X	X		
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Enviroscape© watershed model (50 presentations)	521	Individuals/participants/attendees/customers/recipients		X		X	X	X	X	X		
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Volunteer Stream Monitoring Program	1,604	Individuals/participants/attendees/customers/recipients		X		X	X	X	X	X		
Multiple Sessions	NVSWCD	Newsletter/Flier/Guide	Watershed Calendar Email List	23,862	Number Distributed		X				X				
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Technical Assistance Site Visits	238	Site visits		X			X			X		
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Conservation Assistance Program	66	Individuals/participants/attendees/customers/recipients		X								
Multiple Sessions	NVSWCD	Webpage/Online guides	Solving Drainage and Erosion Problems Online Guide for Homeowners	123,317	Page views		X								
Multiple Sessions	NVSWCD	Webpage/Online guides	NVSWCD website	152,503	Page views	X	X		X	X	X	X	X	X	
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Conservation Planning for managers of 424 acres, included 630 linear feet of new vegetated buffer and 17,810 feet of renewed buffer plans	24	Individuals/participants/attendees/customers/recipients		X			X			X		
Multiple Sessions	NVSWCD	Webpage/Online guides	Earth Friendly Suburban Horse Keeping publication online/print	2,611	Page views		X			X			X		
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Build-Your-Own Composter Program	12	Individuals/participants/attendees/customers/recipients					X	X		X		
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Build-Your-Own Rain Barrel Program (160 Rain barrels distributed)	149	Individuals/participants/attendees/customers/recipients		X								
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Artistic Rain Barrel Program (Two painted rain barrels were placed on display at high-traffic locations in the region)	500	Engagements		X								
Multiple Sessions	NVSWCD	Webpage/Online guides	Rain Garden Design and Construction Guide for homeowners	5,985	Number Distributed		X								
Multiple Sessions	NVSWCD	Webpage/Online guides	Residential Low Impact Landscaping Guide print/online	815	Number Distributed		X								
Multiple Sessions	NVSWCD	Engagement Activity/Workshop	Green Breakfast Seminars, usually 5X per year - held 3 times this year	132	Individuals/participants/attendees/customers/recipients	X	X								

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)									
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts	
Multiple Sessions	NVSWCD	Public Event	Seedling Sale (7560 native tree and shrub seedlings distributed)	573	Individuals/participants/attendees/customers/recipients		X							X	
Multiple Sessions	FCPS	Newsletter/Flier	Get2Green Newsletter	8,500	Number Distributed		X								
Multiple Sessions	FCPS	Social Media	Get2Green Twitter	939	Likes/Followers		X								
Multiple Sessions	WEO	Newsletter/Flier/Guide	Field Guide to Fairfax County's Plants and Animals (Provided Material)	17,000	Number Distributed	X								X	
Multiple Sessions	WEO	Newsletter/Flier/Guide	Fairfax County Field Journal (Provided Material)	15,000	Number Distributed	X									
Multiple Sessions	WEO	Presentation	Stream Crime Investigation (SCI)	525	Individuals/participants/attendees/customers/recipients	X	X		X	X	X	X			
Multiple Sessions	WEO	Engagement Activity/Workshop	Revitalize, Restore, Replant! (R3)	1,578	Individuals/participants/attendees/customers/recipients		X								
Multiple Sessions	Wastewater	Engagement Activity/Workshop	Sewer Science (Stormwater contributions)	2,136	Individuals/participants/attendees/customers/recipients	X			X	X	X	X			
Multiple Sessions	Wastewater	Presentation	Presentations on Wastewater Management and Environmental Stewardship	132	Individuals/participants/attendees/customers/recipients	X			X	X	X	X			
Multiple Sessions	Wastewater	Engagement Activity/Workshop	Plant Tours of Noman Cole Treatment Plant	175	Site visits	X			X	X	X				
3/28/2022	Wastewater	Cleanup	Pohick Creek Cleanup - Noman Cole	15	Individuals/participants/attendees/customers/recipients						X				
5/24/22 & 5/26/22	Wastewater	Public Event	Water Quality Field Day (Wastewater, Stormwater)	152	Individuals/participants/attendees/customers/recipients		X								
4/27/2022	Wastewater	Public Event	Environmental Field Day with Centreville (with Park Authority, NVSWCD, Solid Waste, Stormwater, Wastewater, UFM, Fairfax Water)	343	Individuals/participants/attendees/customers/recipients	X	X		X	X	X	X	X	X	X
6/16/2021	Wastewater	Newsletter/Flier/Guide	Mailing: "Polychlorinated Biphenyls in buildings and facilities" brochure (NVRC)	221	Number Distributed	X									X
5/22/2022	Wastewater	Public Event	Grasses for the Masses	180	Individuals/participants/attendees/customers/recipients	X	X		X	X	X	X	X	X	X
Multiple Sessions	Wastewater	Public Event	CBF Educational Boat Trip	120	Individuals/participants/attendees/customers/recipients	X	X		X	X	X	X	X	X	X
Multiple Sessions	Wastewater	Engagement Activity/Workshop	E4 Moment, Feb 2022, Salt	104	Individuals/participants/attendees/customers/recipients	X								X	
1/15/2021	Wastewater	Newsletter/Flier/Guide	Mailing: "Convenience Store Pollution Prevention" fact sheet	195	Number Distributed	X									X
6/21/2022	FCPA	Engagement Activity/Workshop	GWGCSA	100	Individuals/participants/attendees/customers/recipients			X							
Multiple Sessions	FCPA	Engagement Activity/Workshop	School trips about water habitats K-6	31	Individuals/participants/attendees/customers/recipients		X		X	X	X	X			
Multiple Sessions	FCPA	Engagement Activity/Workshop	Scout badge programs	60	Individuals/participants/attendees/customers/recipients		X				X				



Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts
Multiple Sessions spring cancelled	FCPA	Cleanup	watershed Clean ups	1,064	Individuals/participants/attendees/customers/recipients		X				X			
Multiple Sessions	FCPA	Engagement Activity/Workshop	Invasive plant volunteer engagement	340	Individuals/participants/attendees/customers/recipients		X		X				X	
Multiple Sessions	FCPA	Engagement Activity/Workshop	Family water education programs	576	Individuals/participants/attendees/customers/recipients					X	X		X	
Multiple Sessions	FCPA	Webpage/Online guides	Residents self reporting green actions on the WTGG web map	27	Page views		X			X			X	
2/11/2021	FCPA	Presentation	Long Branch Watershed Management Update	47	Individuals/participants/attendees/customers/recipients		X			X			X	
3/2/2021	FCPA	Presentation	Friends of Holmes Run Meeting, introducing WTGG	12	Individuals/participants/attendees/customers/recipients		X			X	X		X	
3/7/2021	FCPA	Presentation	WTGG Mow Less, Grow More virtual presentation to Friends of Mason Neck Park	33	Individuals/participants/attendees/customers/recipients		X			X			X	
3/10/2021	FCPA	Presentation	WTGG Mow Less, Grow More virtual presentation to McLean Citizens Association	24	Individuals/participants/attendees/customers/recipients		X			X			X	
5/18/2021	FCPA	Presentation	WTGG Mow Less, Grow More virtual presentation through Burke Library	6	Individuals/participants/attendees/customers/recipients		X			X			X	
6/16/2021	FCPA	Presentation	WTGG Native Plant Butterfly Gardens youth presentation through Burke Library	12	Individuals/participants/attendees/customers/recipients		X							
6/26/2021	FCPA	Public Event	Mount Vernon Environmental Expo	66	Individuals/participants/attendees/customers/recipients		X			X	X		X	
Multiple Sessions	FCPA	Social Media	Facebook FCPA 6 WTGG posts	49	Likes/Followers		X			X			X	
Multiple Sessions	FCPA	Social Media	Facebook invasive yard waste	221	Likes/Followers		x			x				
Multiple Sessions	FCPA	Social Media	Facebook watershed clean up	174	Likes/Followers		x			x				
7/1/2020	FCPA	Newsletter/Flier/Guide	Resources Newsletter WTGG	4,894	Number Distributed		x			x				
9/1/2020	FCPA	Newsletter/Flier/Guide	Resources Newsletter WTGG	4,226	Number Distributed		x			x			x	
10/20/2021	FCPA	Newsletter/Flier/Guide	Resources Newsletter Watershed clean up	3,261	Number Distributed		x							
3/21/2021	FCPA	Newsletter/Flier/Guide	Resources Newsletter Yard waste	5,089	Number Distributed		x			x				
4/21/2021	FCPA	Newsletter/Flier/Guide	Resources Newsletter invasive trash	6,377	Number Distributed					x				
5/21/2021	FCPA	Newsletter/Flier/Guide	Resources Newsletter mow less grow more	6,320	Number Distributed		X			X			X	
Multiple Sessions	IDID	Engagement Activity/Workshop	Industrial and High Risk Runoff (IHRR) Program	140	Engagements	X								X
Multiple Sessions	IDID	Newsletter/Flier/Guide	Pollution Prevention packet	304	Number Distributed	X			X	X	X	X	X	X
Multiple Sessions	IDID	Newsletter/Flier/Guide	Proper Discharge of Swimming Pool Water	1,563	Number Distributed	X								X
Multiple Sessions	IDID	Newsletter/Flier/Guide	Snow Removal	496	Number Distributed	X								X
Multiple Sessions	Solid Waste	Webpage/Online guides	America Recycles Day	372	Page views	X			X		X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Apply for Vacuum Leaf Service	327	Page views					X				X

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts
Multiple Sessions	Solid Waste	Webpage/Online guides	A-Z List of Recycling and Trash Topics	4,999	Page views					X	X			X
Multiple Sessions	Solid Waste	Webpage/Online guides	Commercial Hazardous Waste	1,717	Page views				X					X
Multiple Sessions	Solid Waste	Webpage/Online guides	Composting and More	239	Page views									X
Multiple Sessions	Solid Waste	Webpage/Online guides	Curbside Recycling	8,890	Page views					X				X
Multiple Sessions	Solid Waste	Webpage/Online guides	Curbside Trash	17,427	Page views				X					
Multiple Sessions	Solid Waste	Webpage/Online guides	Curbside Yard Waste	35,074	Page views				X					
Multiple Sessions	Solid Waste	Webpage/Online guides	Disposal Companies for Specialized or Hazardous Waste	1,221	Page views						X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Electric Sunday (alias)	183	Page views				X					X
Multiple Sessions	Solid Waste	Webpage/Online guides	Elimination of Plastic Bags for Yard Waste Collection FAQs	1,299	Page views	X					X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Household Hazardous Waste	41,899	Page views					X				X
Multiple Sessions	Solid Waste	Webpage/Online guides	Household Hazardous Waste (alias)	1,912	Page views						X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Leaf Collection Dates	24,305	Page views	X					X			
Multiple Sessions	Solid Waste	Webpage/Online guides	MEGABULK Pick Up	9	Page views					X				X
Multiple Sessions	Solid Waste	Webpage/Online guides	Nonresidential Recycling and Trash	548	Page views	X					X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Organic Waste	700	Page views						X			X
Multiple Sessions	Solid Waste	Webpage/Online guides	Paper, Not Plastic: A Public Outreach Toolkit for Proper Disposal of Yard Waste	543	Page views						X			X
Multiple Sessions	Solid Waste	Webpage/Online guides	Plastic	13,249	Page views				X		X			X
Multiple Sessions	Solid Waste	Webpage/Online guides	Recycling and Trash	71,912	Page views						X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Recycling and Trash (alias)	18,230	Page views						X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Recycling and Trash FAQs	9,216	Page views						X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Recycling and Trash for Businesses	1,447	Page views	X			X		X		X	
Multiple Sessions	Solid Waste	Webpage/Online guides	Recycling and Trash for Fairfax County Residents	17,897	Page views	X			X		X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Recycling and Trash Locations and Hours	68,763	Page views	X			X		X			
Multiple Sessions	Solid Waste	Webpage/Online guides	Special Pick Up	63,137	Page views	X			X	X				
Multiple Sessions	Solid Waste	Webpage/Online guides	Subscribe to Vacuum Leaf Collection Email Updates	2,509	Page views					X				X
Multiple Sessions	Solid Waste	Webpage/Online guides	Transition from Plastic Bags for Yard Waste Collection FAQs	82	Page views					X				X
Multiple Sessions	Solid Waste	Webpage/Online guides	Trash and recycling guidelines	780	Page views				X					
Multiple Sessions	Solid Waste	Webpage/Online guides	Vacuum Leaf Collection	4,961	Page views	X						X		X
Multiple Sessions	Solid Waste	Webpage/Online guides	Vacuum Leaf Collection FAQs	1,294	Page views	X								X

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)									
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts	
Multiple Sessions	Solid Waste	Webpage/Online guides	Very Small Quantity Generators (VSQG - formerly CESQGs)	1,214	Page views	X									X
Multiple Sessions	Solid Waste	Webpage/Online guides	Yard Waste	18,413	Page views	X									
Multiple Sessions	Solid Waste	Webpage/Online guides	Yard Waste Collection Suspension FAQs	1,067	Page views	X									
Multiple Sessions	SWPD	Webpage/Online guides	A Field Guide to Fairfax County's Plants and Wildlife	869	Page views	X									X
Multiple Sessions	SWPD	Webpage/Online guides	Accotink Creek Restoration Project at Wakefield Park	220	Page views	X			X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Accotink Creek Tributary at Carleigh Parkway (AC82-0015) (Project Number: SD-000031-228)	162	Page views	X			X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Accotink Creek Watershed	1,095	Page views	X									
Multiple Sessions	SWPD	Webpage/Online guides	Accotink Tributary at Danbury Forest Stream Restoration (SD000031-179)	112	Page views	X									X
Multiple Sessions	SWPD	Webpage/Online guides	Belle Haven, Dogue Creek and Four Mile Run Watersheds	376	Page views										X
Multiple Sessions	SWPD	Webpage/Online guides	Cameron Run Tributary at La Vista Drive Stream Restoration	291	Page views	X			X	X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Cameron Run Watershed	666	Page views	X			X	X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Car Washing the Right Way	826	Page views	X	X	X	X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Colvin Run Phase II at Lake Fairfax Park Stream Restoration	153	Page views										X
Multiple Sessions	SWPD	Webpage/Online guides	Cooling Towers	230	Page views	X			X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Crook Branch at Mantua Elementary School (SD-000031-135)	1,144	Page views	X			X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Cub Run and Bull Run Watersheds	552	Page views	X			X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Dead Run at Georgetown Pike Stream Restoration (SD-000031-230)	272	Page views		X								X
Multiple Sessions	SWPD	Webpage/Online guides	Difficult Run Watershed	1,217	Page views		X								
Multiple Sessions	SWPD	Webpage/Online guides	Dogue Creek at Old Mill Road (SD-0000031-256)	167	Page views		X								
Multiple Sessions	SWPD	Webpage/Online guides	Education Programs (alias)	62	Page views	X	X		X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Fairfax Recovery Wheel	134	Page views	X									X
Multiple Sessions	MSMD	Webpage/Online guides	FAQs: Stormwater Maintenance and Inspections	113	Page views	X	X		X	X	X	X	X	X	X
Multiple Sessions	MSMD	Webpage/Online guides	Find Your Watershed	4,368	Page views	X	X		X	X	X	X	X	X	X
Multiple Sessions	MSMD	Webpage/Online guides	Flatlick Branch Stream Restoration	213	Page views	X	X		X	X	X	X	X	X	X
Multiple Sessions	SWPD	Webpage/Online guides	Headwaters of Popes Head Creek at Brecon Ridge Subdivision Stream Restoration Project (SD-000031-220) (PH9271/PH9272)	177	Page views	X									
Multiple Sessions	SWPD	Webpage/Online guides	Illicit Discharge and Improper Disposal (IDID) Program	827	Page views	X	X		X	X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Industrial and High Risk Runoff (IHRR) Program	114	Page views		X		X	X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Lake Accotink Dredging (AC89-0009)	3,137	Page views						X				
Multiple Sessions	SWPD	Webpage/Online guides	Lake Accotink Dredging (AC89-0009) (alias)	637	Page views	X	X		X	X	X		X		

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts
Multiple Sessions	SWPD	Webpage/Online guides	Little Hunting Creek Watershed	307	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	Little Pimmit Run at Chesterbrook Road Stream Restoration	951	Page views	X					X			
Multiple Sessions	SWPD	Webpage/Online guides	Little Pimmit Run Tributary at Woodland Terrace Stream Restoration	195	Page views		X						X	
Multiple Sessions	SWPD	Webpage/Online guides	Little Rocky Run and Johnny Moore Creek Watershed	228	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	Long Branch North at Arlington Blvd and Robin Ridge Court Stream Restoration (SD-000031-219)	227	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	Lower Occoquan Watersheds	561	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	Long Branch Central Watershed Management Area Project	991	Page views	X	X		X	X	X	X	X	
Multiple Sessions	MSMD	Webpage/Online guides	Middle Potomac Watersheds	774	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	MS4 Program Plan and Annual Reports	557	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Municipal Separate Storm Sewer System (MS4) Permit	1,052	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Nichol Run and Pond Branch Watersheds	211	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	Old Courthouse Spring Branch at Ashgrove Historic Park Stream Restoration, SD-000031-236	197	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Operation Stream Shield	905	Page views	X	X				X			
Multiple Sessions	SWPD	Webpage/Online guides	On My Property	3,698	Page views		X							
Multiple Sessions	SWPD	Webpage/Online guides	Paul Spring Branch at Sherwood Hall Stream Restoration, SD000031-237	497	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Paul Springs Branch at Hollin Hills - Segments 1 and 2 Combined	180	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Pollution Prevention packet	262	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Proper Discharge of Swimming Pool Water	1,880	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Rocky Run at Hickory Hollow Lane and Ashlawn Park Stream Restoration Project (SD-000031-238)	189	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	Scotts Run at Dolley Madison Stream Restoration Project (SD-000031-250)	55	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	Snow Removal	3,026	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	Stormy the Raindrop	459	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	Stream Crime Investigation (SCI)	28	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	Urban Forestry Education Programs	272	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	Volunteer Opportunities and Educational Programs (alias)	41	Page views	X	X							
Multiple Sessions	SWPD	Webpage/Online guides	What's that Stuff in the Stream?	5,374	Page views	X	X							
Multiple Sessions	Wastewater	Webpage/Online guides	Business and Industrial Wastewater Management	394	Page views				X					
Multiple Sessions	Wastewater	Webpage/Online guides	Car Wash Policy	240	Page views	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater	Webpage/Online guides	Fats, Oils and Grease (FOG)	1,759	Page views	X	X		X	X	X	X	X	

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts
Multiple Sessions	Wastewater	Webpage/Online guides	Residential Wastewater Management	1,929	Page views	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater	Webpage/Online guides	Wastewater - What You Can Do	346	Page views	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater	Webpage/Online guides	Wastewater Management for Educators and Students	231	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Controlling and Managing Invasive Plants	577	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Destructive Tree Pest Kills Trees	474	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Emergency Work at Fort Hunt Road and Hunting Cove Place	75	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	End of Season Guidance for Draining Swimming Pools	397	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Fairfax County Begins Transition from Plastic Yard Waste Bags	2,322	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Fairfax County Collected 366.85 Tons of Household Hazardous Waste in 2019	19	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Fairfax County Farmers Market Composting Pilot Program Expanding to Several Farmers Markets	171	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Floating Litter Trap Installed in Little Hunting Creek	180	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Girl Scouts Jump into Water Event	4	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Guidance for Swimming Pool Owners and Managers	6	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Infrastructure Week Quality of Water = Quality of Life	1,026	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Invasive Plant Management	13	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Litter (alias to new agency-wide page)	1	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Litter (new agency wide link)	3,361	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	Managing Trees in Preservation Areas	130	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	New Rain Garden to Replace Crumbling Fountain	118	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Operation Stream Shield	160	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Pilot Program to Remove Litter from Waterways Begins	158	Page views	X	X		X	X	X	X	X	
Multiple Sessions	SWPD	Webpage/Online guides	Polluted Runoff is a Leading Cause of Water Pollution	318	Page views	X	X		X	X	X	X	X	
													X	
													X	
Multiple Sessions	DPWES	Webpage/Online guides	Volunteering	2,760	Page views	X	X		X	X	X	X	X	
Multiple Sessions	Wastewater	Webpage/Online guides	Wastewater Testing Protects Residents and Environment	128	Page views	X	X		X	X	X	X	X	
Multiple Sessions	DPWES	Webpage/Online guides	What are Invasive Plants?	152	Page views	X	X		X	X	X	X	X	
Sep-21	IDID	Newsletter/Flier	Pollution Prevention Letter to Homeowner Associations	1,737	Number Distributed				X	X		X	X	
Multiple Sessions (2022)	IDID	Newsletter/Flier/Guide	Pollution Prevention packet	63	Number Distributed	X			X	X	X	X	X	X
Multiple Sessions (2022)	IDID	Newsletter/Flier/Guide	Proper Discharge of Swimming Pool Water	10	Number Distributed	X								

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)									
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Multiple Sessions (2022)	IDID	Newsletter/Flier/Guide	Salt and Sand Piles Storage Guidance	10	Number Distributed	X									X
Multiple Sessions (2022)	IDID	Social Media	Painting message (Facebook)	400	Reached		X								
Multiple Sessions (2022)	IDID	Social Media	Painting message (Twitter)	88	Impressions/Views		X								
12/8/2021	IDID	Social Media	Be Winter Salt Smart (Facebook)	7	Reached		X								
1/3/2022	IDID	Social Media	Be Winter Salt Smart (Facebook)	5	Reached		X								
Multiple Sessions	CFC	Social Media	Plastic Free July	306	Engagements						X				
7/1/2021	CFC	Social Media	History of plastic	146	Engagements						X				
7/8/2021	CFC	Social Media	"Tap Water Truths"	223	Engagements						X				
7/14/2021	CFC	Social Media	Plastic Pollution (about)	134	Engagements						X				
7/22/2021	CFC	Social Media	Waste Reduction: upcycle, downcycle, recycle	203	Engagements						X				
7/29/2021	CFC	Social Media	Fairfax Bag Fee Public Hearing	109	Engagements						X				
8/3/2021	CFC	Cleanup	Stream Cleanup	20	Individuals/participants/attendees/customers/recipients		X								
8/3/2021	CFC	Engagement Activity/Workshop	Clean Fairfax c and Food Pantry Collaboration	200	Individuals/participants/attendees/customers/recipients		X				X				
8/5/2021	CFC	Social Media	National Water Quality Month	154	Engagements						X				
8/12/2021	CFC	Social Media	Virginia Environmental Initiatives 2021	150	Engagements						X				
8/17/2021	CFC	Engagement Activity/Workshop	Clean Fairfax presented to Virginia Plastic Pollution Group	50	Individuals/participants/attendees/customers/recipients										
8/26/2021	CFC	Cleanup	Stream Cleanup	5	Individuals/participants/attendees/customers/recipients		X								
9/21/2021	CFC	Engagement Activity/Workshop	Clean Fairfax's Virginia Plastic Pollution Network Meeting	50	Individuals/participants/attendees/customers/recipients						X				
9/30/2021	CFC	Social Media	Virginia Bag Bill Update	699	Engagements						X				
10/1/2021	CFC	Social Media	"Healthy Chesapeake May, Rivers and Creeks"	144	Engagements						X				
10/5/2021	CFC	Cleanup	Stream Cleanup	2	Individuals/participants/attendees/customers/recipients		X								
10/10/2021	CFC	Social Media	National Farmer's Day	226	Engagements						X				
10/18/2021	CFC	Engagement Activity/Workshop	Clean Fairfax presented to Sierra Club's Zero Waste Initiative	50	Individuals/participants/attendees/customers/recipients		X				X				
10/28/2021	CFC	Social Media	Halloween Tips	109	Engagements					X	X				
11/4/2021	CFC	Social Media	Post-Halloween and Sustainability	151	Engagements					X	X				
11/9/2021	CFC	Social Media	National Security and Climate Change	89	Engagements						X				
11/10/2021	CFC	Social Media	Fairfax County Environment's Ask the Experts	104	Engagements						X				
11/15/2021	CFC	Social Media	America Recycles Day	75	Engagements						X				
11/18/2021	CFC	Social Media	Stream Story	125	Engagements						X				
11/22/2021	CFC	Social Media	Sustainable Thanksgiving	478	Engagements						X				
11/27/2021	CFC	Social Media	MOM's Organic Market Holiday Light Recycling	3,493	Engagements						X				
12/2/2021	CFC	Social Media	Sustainable Christmas	102	Engagements						X				
12/7/2021	CFC	Social Media	Plastic Waste Reduction Goals	97	Engagements						X				
12/3/2021	CFC	Social Media	About Extended Producer Responsibility	79	Engagements						X				
12/3/2021	CFC	Social Media	How Extended Producer Responsibility Works	69	Engagements						X				
12/8/2021	CFC	Social Media	Green Christmas Tips	71	Engagements					X	X				
12/10/2021	CFC	Social Media	Sustainable Holiday Tips	98	Engagements						X				
12/10/2021	CFC	Social Media	"Saving Us"	218	Engagements						X				
12/10/2021	CFC	Social Media	Waste Reduction Swap Fairfax Public Library	76	Engagements						X				
12/11/2021	CFC	Social Media	World Soil Day	73	Engagements						X				



Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
						Public reporting of illicit discharges or improper disposal	Individual and group involvement in local water quality improvement initiatives	Encourage integrated management practice (IMP) plans at public and private golf courses	Proper management disposal of used oil and household hazardous wastes	Proper disposal of pet waste and household yard waste	Promote and publicize the use of the permittee's litter prevention program	Methods for residential car washing that minimize water quality impacts	Proper use, application, and disposal of PHF by public, commercial, and private applicators and distributors	Target commercial, industrial, and institutional entities likely to have significant stormwater impacts
12/11/2021	CFC	Social Media	Celebrate Fairfax	45	Engagements						X			
12/13/2021	CFC	Social Media	Reusable Bag Tips	140	Engagements						X			
12/14/2021	CFC	Social Media	Plant NoVA Natives	52	Engagements						X			
12/14/2021	CFC	Social Media	Reuse Tips	61	Engagements						X			
12/16/2021	CFC	Social Media	Bag Bill Update	107	Engagements						X			
12/17/2021	CFC	Social Media	Eco Tips	63	Engagements						X			
12/17/2021	CFC	Social Media	Waste Reduction Skills	714	Engagements						X			
12/20/2021	CFC	Social Media	Sustainable Holiday Tips	98	Engagements						X			
12/23/2021	CFC	Social Media	Plastic Sink	66	Engagements						X			
1/10/2022	CFC	Social Media	Martin Luther King Day	76	Engagements						X			
1/15/2022	CFC	Social Media	Sustainable Swap	25	Engagements						X			
1/17/2022	CFC	Social Media	Update: Virginia State of Legislative Session	95	Engagements						X			
1/18/2022	CFC	Social Media	Virginia Environmental Justice Summit	40	Engagements									
1/19/2022	CFC	Engagement Activity/Workshop	Plastic Free Virginia Water Wednesday	50	Engagements						X			
1/19/2022	CFC	Social Media	SNAP and Seeds	2,193	Engagements						X			
1/19/2022	CFC	Social Media	Loudon Bag Bill Update	745	Engagements						X			
1/25/2022	CFC	Social Media	Plastic Free in France	140	Engagements						X			
1/27/2022	CFC	Social Media	Beyond Plastic's Reckoning the US's Role in the Global Climate Crisis socials	175	Engagements						X			
Multiple Sessions	CFC	Social Media	Black History Month	260	Engagements						X			
2/3/2022	CFC	Social Media	Faith Alliance for Climate Solution's Update	158	Engagements						X			
2/5/2022	CFC	Social Media	Get Outside Saturday	46	Engagements						X			
2/6/2022	CFC	Social Media	Faith Alliance for Climate Solutions Reuse	66	Engagements						X			
2/13/2022	CFC	Social Media	Farmers Market Plastic Bag Free	51	Engagements						X			
Multiple Sessions	CFC	Social Media	Valentines Day	381	Engagements						X			
2/14/2022	CFC	Social Media	President's Day	156	Engagements						X			
2/22/2022	CFC	Social Media	Home Composting 101	242	Engagements						X			
2/22/2022	CFC	Social Media	Chile Plastic Legislation	92	Engagements						X			
2/22/2022	CFC	Social Media	Reusables Care Tips	29	Engagements						X			
2/24/2022	CFC	Social Media	Bee Conservation	237	Engagements					X	X			
2/26/2022	CFC	Social Media	Volunteer Information Update	176	Engagements						X			
Multiple Sessions	CFC	Social Media	Virginia Conservation Advocacy Education	324	Engagements						X			
Multiple Sessions	CFC	Social Media	Call for Earth Daze Vendors	960	Engagements						X			
3/10/2022	CFC	Social Media	Community Cleanup Promotion	149	Engagements						X			
3/14/2022	CFC	Webpage/Online guides	Earth Month+ Initiative Kickoff	237	Engagements									
3/16/2022	CFC	Social Media	Refresh Your Reusables	199	Engagements						X			
3/22/2022	CFC	Social Media	Potomac Riverkeeper Clean Water Act Anniversary	219	Engagements						X			
3/23/2022	CFC	Social Media	Kendra Scott Fundraiser Promotions	690	Engagements						X			
3/23/2022	CFC	Social Media	Ukraine and NoVA Regional Commission	272	Engagements						X			
3/26/2022	CFC	Engagement Activity/Workshop	Kendra Scott Fundraiser	100	Individuals/participants/attendees/customer s/recipients		X				X			
3/27/2022	CFC	Social Media	Get in on the Green Action	157	Engagements						X			
3/28/2022	CFC	Social Media	Earth Month+ Calendar	663	Engagements		X			X	X			
3/31/2022	CFC	Podcast/video/PSA	Trace the Trash	62	Individuals/participants/attendees/customer s/recipients						X			
4/6/2022	CFC	Podcast/video/PSA	Use Reusables	94	Individuals/participants/attendees/customer s/recipients						X			
4/11/2022	CFC	Social Media	MOM's Water Conservation	403	Engagements						X			
4/13/2022	CFC	Social Media	Community Cleanup Promotion	325	Engagements						X			
4/14/2022	CFC	Social Media	Cleanup Supplies Last Call	280	Engagements						X			
4/15/2022	CFC	Social Media	Benefit of Trees	81	Engagements						X			

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
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4/21/2022	CFC	Social Media	Aslin Earth Daze (about)	539	Engagements		X				X			
4/22/2022	CFC	Social Media	Earth Day Post	165	Engagements						X			
4/23/2022	CFC	Engagement Activity/Workshop	Clean Fairfax sponsored Mt. Vernon Environmental Expo	500	Individuals/participants/attendees/customers/recipients		X				X			
4/24/2022	CFC	Engagement Activity/Workshop	Aslin Earth Daze	1,200	Individuals/participants/attendees/customers/recipients		X				X			
4/27/2022	CFC	Social Media	Plant NoVA Trees	181	Engagements						X			
4/28/2022	CFC	Social Media	Urban Diversity Citizen Science	97	Engagements						X			
4/29/2022	CFC	Social Media	Arbor Day	12	Engagements						X			
5/8/2022	CFC	Social Media	Mother Earth Mother's Day	84	Engagements						X			
5/9/2022	CFC	Social Media	Plastic is Oil	13	Engagements						X			
5/11/2022	CFC	Social Media	Protect Yourself and Pollinators	220	Engagements						X			
5/13/2022	CFC	Social Media	Native Ground Coverings	303	Engagements						X			
5/14/2022	CFC	Social Media	Tip and Toss	251	Engagements						X			
5/20/2022	CFC	Social Media	World Bee Day	71	Engagements						X			
5/27/2022	CFC	Social Media	World Otter Day	37	Engagements						X			
6/5/2022	CFC	Social Media	Lake Accotink Park Closure	399	Engagements						X			
6/8/2022	CFC	Social Media	World Ocean Day	247	Engagements						X			
6/20/2022	CFC	Social Media	Juneteenth	72	Engagements						X			
Multiple Sessions	LDS	Newsletter/Flier/Guide	RPA outreach	27,694	Engagements	X								X
7/12/2021	Solid Waste	Engagement Activity/Workshop	Holistic Moms	13	Engagements				X	X	X			
7/28/2021	Solid Waste	Engagement Activity/Workshop	James Lee Community Center	20	Engagements				X	X	X			
8/23/2021	Solid Waste	Engagement Activity/Workshop	Burke Lion's Club	7	Engagements				X	X	X			
9/9/2021	Solid Waste	Engagement Activity/Workshop	Alexandria Kiwanis	8	Engagements				X	X	X			
10/7/2021	Solid Waste	Engagement Activity/Workshop	350 Fairfax	150	Engagements				X	X	X			
10/17/2021	Solid Waste	Engagement Activity/Workshop	Mt. Vernon Presbyterin Church	10	Engagements				X	X	X			
10/19/2021	Solid Waste	Engagement Activity/Workshop	Falls Church Lion's Club	6	Engagements				X	X	X			
10/20/2021	Solid Waste	Engagement Activity/Workshop	Reston Lion's Club	8	Engagements				X	X	X			
2/25/2022	Solid Waste	Engagement Activity/Workshop	Tower Club Women's Group	20	Engagements				X	X	X			
3/29/2022	Solid Waste	Engagement Activity/Workshop	NARFE Presentation	36	Engagements				X	X	X			
4/2/2022	Solid Waste	Engagement Activity/Workshop	Atrium Apartment event	15	Engagements				X	X	X			
4/2/2022	Solid Waste	Engagement Activity/Workshop	Audobon Apartment Event	15	Engagements				X	X	X			
4/22/2021	Solid Waste	Engagement Activity/Workshop	St Mark 3d grade class	30	Engagements				X	X	X			
4/23/2022	Solid Waste	Engagement Activity/Workshop	Mount Vernon Environmental Expo	500	Engagements				X	X	X			
4/23/2022	Solid Waste	Engagement Activity/Workshop	McLean Earth Day	120	Engagements				X	X	X			
4/28/2022	Solid Waste	Engagement Activity/Workshop	Town of Vienna Green Expo	75	Engagements				X	X	X			
5/5/2022	Solid Waste	Engagement Activity/Workshop	350 Fairfax members meeting	20	Engagements				X	X	X			

Date	Implementer	Category	Activity	Number of Engagements	Engagement Units	Required Public Education/Participation Messages (check all that apply for each activity)								
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5/11/2022	Solid Waste	Engagement Activity/Workshop	Westglade Resident Meeting	16	Engagements				X	X	X			
5/23/2022	Solid Waste	Engagement Activity/Workshop	Green Service showcase at Lewi HS	60	Engagements				X	X	X			
6/6/2022	Solid Waste	Engagement Activity/Workshop	Great Falls Citizens Association	25	Engagements				X	X	X			
10/13/2021	Solid Waste	Engagement Activity/Workshop	Women's Social Impact Group at the JCC	14	Engagements				X	X	X			
11/22/2021	Solid Waste	Engagement Activity/Workshop	Edison HS	100	Engagements				X	X	X			
11/23/2021	Solid Waste	Engagement Activity/Workshop	Edison HS	100	Engagements				X	X	X			
3/2/2022	Solid Waste	Engagement Activity/Workshop	North Springfield Civic Association	7	Engagements				X	X	X			
6/13/2022	Solid Waste	Engagement Activity/Workshop	Greenspring Village	30	Engagements				X	X	X			
9/1/2021	Solid Waste	Engagement Activity/Workshop	National Active and Retired Federal Employees Association	30	Engagements				X	X	X			
9/13/2021	Solid Waste	Engagement Activity/Workshop	GF Sierra Club	32	Engagements				X	X	X			
9/15/2021	Solid Waste	Engagement Activity/Workshop	Saragota Community Association	21	Engagements				X	X	X			
9/23/2021	Solid Waste	Engagement Activity/Workshop	Raceway Farms HOA	14	Engagements				X	X	X			
9/8/2021	Solid Waste	Engagement Activity/Workshop	Waynewood Citizens Association Board	8	Engagements				X	X	X			
Multiple Sessions	CWP	Engagement Activity/Workshop	Clean Water Partners Survey	500	Individuals/participants/attendees/customers/recipients		X		X	X		X	X	
Multiple Sessions	CWP	Podcast/video/PSA	Clean Water Partners TV Ad Views	820,154	Page views		X		X	X		X	X	
Multiple Sessions	CWP	Podcast/video/PSA	Clean Water Partners Online Ad Views	29,216	Page views		X		X	X		X	X	

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R9

Dry Weather Screening Report

VSMP Permit Number VA0088587  
9-30-2022

StormNet:	Results of Inspection	Follow-up Actions
STMN0931471031	Chlorine Exceedance	IDID Work Order - 2028557. On 11/17/21, IDID staff received complaint. On 11/18/21, IDID staff referred the complaint to Stephanie Doblosky with Fairfax Water. On 4/19/22, Stephanie Doblosky with Fairfax Water, stated there is no longer a water line leaking on Memorial Street, Alexandria. On 4/29/22, IDID staff conducted a follow-up inspection, and the test results confirm that the water main break on Memorial Street, Alexandria, has been repaired by Fairfax Water. Status "Completed".
STMN0933479037	Chlorine Exceedance	IDID Work Order - 2028545. On 11/17/21, IDID staff received complaint. On 11/18/21, IDID staff referred the complaint to Stephanie Doblosky with Fairfax Water. On 4/19/22, Stephanie Doblosky with Fairfax Water, stated their maintenance crew could not find a water line leaking near 7528 Republic Ct., Alexandria. On 4/29/22, IDID staff conducted a follow-up inspection and the test results confirm that their is still a water line leaking near 7528 Republic Ct., and the potable water is discharging into MS4 outfall STMN0933479037. IDID staff conducted many follow-up inspections, but Fairfax Water maintenance crew has not been able to locate the water line leak in front of Mount Vernon Square Apartments at 7528 Republic Ct., Alexandria. Status "Open."
STMN0993495742	Specific Conductance, Copper and Detergent exceedances	IDID Work Order - 1990498. On 11/15/21, IDID staff received complaint. On 11/17/21, IDID staff conducted inspection near 8536 Terminal Road, Lorton, at an industrial park complex. IDID staff concluded the test exceedances were coming from vehicle washing from businesses at the industrial park. IDID staff educated all the businesses at 8532, 8534, and 8536 Terminal Road during IDID and IHRR inspections. Informing the businesses that vehicle washing is not allowed to discharge into any storm drain. On 4/20/2022, IDID staff collected a sample at MS4 outfall STMN0993495742, for drainage areas at 8532, 8534, and 8536 Terminal Road, Lorton, to ensure that the educational outreach "no vehicle washing outside" has been effective. The test results were all normal for all parameters tested, from sample collected on 4/20/2022. The test results indicate that the educational outreach has been effective in stopping most if not all vehicle wash water discharging into the MS4 outfall STMN0993495742. Status "Completed." IDID Work Order - 1990708. Dry weather reported exceedance to IDID staff. On 11/18/2021, staff tracked flow to a small PVC pipe tapped into STMN0543084147 that had a trickle flow with conductivity of 2885uc. No indication of the PVC pipe on Stormnet. The pipe appeared to originate from I66. The issue was reported to VDOT who had the following response: "We looked into this structure and the pipes connecting to them. I pulled some site plans for the 66 project and it does not show any VDOT connections to this structure. However, there is a chance that the pipes coming into this structure are existing groundwater underdrains from the roadway (here's a standard detail of the groundwater underdrains) and these underdrains can discharge water during dry weather. The discharge from these underdrains should not result in any high conductivity readings." Based on VDOT's response, Fairfax County cannot determine the location of the high conductivity flow. Status: "Completed"
STMN0543056173	Specific Conductance and Copper Exceedance	
STMN0163407652	No Exceedances	
STMN0163514465	No Exceedances	
STMN0171005211	No Exceedances	
STMN0171005215	No Exceedances	
STMN0171511762	No Exceedances	
STMN0171515365	No Exceedances	
STMN0172004793	No Exceedances	
STMN0172004879	No Exceedances	
STMN0172009616	No Exceedances	
STMN0174007510	No Exceedances	
STMN0174007737	No Exceedances	
STMN0174007811	No Exceedances	
STMN0174008467	No Exceedances	
STMN0174089941	No Exceedances	
STMN0181006134	No Exceedances	
STMN0181006140	No Exceedances	
STMN0181006146	No Exceedances	
STMN0181006169	No Exceedances	
STMN0181006796	No Exceedances	
STMN0183007542	No Exceedances	
STMN0183007664	No Exceedances	
STMN0223405601	No Exceedances	
STMN0294413784	No Exceedances	
STMN0301409774	No Exceedances	
STMN0302408869	No Exceedances	
STMN0334086505	No Exceedances	
STMN0334506192	No Exceedances	
STMN0341023825	No Exceedances	
STMN0341023991	No Exceedances	
STMN0344021766	No Exceedances	
STMN0344027509	No Exceedances	
STMN0442033318	No Exceedances	
STMN0442033318	No Exceedances	
STMN0442039082	No Exceedances	
STMN0443038058	No Exceedances	
STMN0443038341	No Exceedances	
STMN0443051239	No Exceedances	
STMN0443051282	No Exceedances	
STMN0443051584	No Exceedances	
STMN0445117268	No Exceedances	
STMN0484425125	No Exceedances	
STMN0484425134	No Exceedances	
STMN0492418506	No Exceedances	
STMN0492418933	No Exceedances	
STMN0492418956	No Exceedances	
STMN0492418958	No Exceedances	
STMN0494429291	No Exceedances	
STMN0494423060	No Exceedances	
STMN0494423063	No Exceedances	
STMN0494423078	No Exceedances	
STMN0541042653	No Exceedances	
STMN0541042674	No Exceedances	
STMN0541042825	No Exceedances	
STMN0541043029	No Exceedances	
STMN0541043139	No Exceedances	
STMN0541043397	No Exceedances	
STMN0543084121	No Exceedances	
STMN0551052821	No Exceedances	
STMN0551052917	No Exceedances	
STMN0551053586	No Exceedances	
STMN0551058844	No Exceedances	
STMN0551059621	No Exceedances	
STMN0552045450	No Exceedances	
STMN0552045613	No Exceedances	
STMN0552045797	No Exceedances	
STMN0562059853	No Exceedances	
STMN0562059975	No Exceedances	
STMN0562065830	No Exceedances	
STMN0562069806	No Exceedances	
STMN0564043956	No Exceedances	
STMN0571068190	No Exceedances	
STMN0594433252	No Exceedances	
STMN0594433889	No Exceedances	
STMN0594434240	No Exceedances	
STMN0594434423	No Exceedances	
STMN0594434428	No Exceedances	
STMN0594434429	No Exceedances	
STMN0594434466	No Exceedances	
STMN0594434451	No Exceedances	
STMN0594434452	No Exceedances	
STMN0813464266	No Exceedances	
STMN0814462872	No Exceedances	
STMN0814463067	No Exceedances	
STMN0814463068	No Exceedances	
STMN0814463072	No Exceedances	
STMN0902474168	No Exceedances	
STMN0913480921	No Exceedances	
STMN0913480942	No Exceedances	
STMN0913480969	No Exceedances	
STMN0913481065	No Exceedances	
STMN0932092290	No Exceedances	
STMN0932470359	No Exceedances	
STMN0992487877	No Exceedances	
STMN0993495726	No Exceedances	
STMN0993495727	No Exceedances	
STMN0994495022	No Exceedances	
STMN0994495035	No Exceedances	
STMN0994495062	No Exceedances	
STMN1062500289	No Exceedances	
STMN1072075512	No Exceedances	
STMN1081499892	No Exceedances	

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R10

Wet Weather Screening Report

VSMP Permit Number VA0088587  
9-30-2022



							Analytical Results (event mean concentration)																										
Monitoring Site	STMN #	Sample Type	Rainfall Start Date	Rainfall Amount		Last Rainfall Date	COD (mg/L)	Hardness		Si (mg/L)	SPC (µS/cm)	TDS (mg/L)	TSS (mg/L)	Cd (ug/L)	Ca (mg/L)	Cr (ug/L)	Cu (ug/L)	Fe (ug/L)	Pb (ug/L)	Mg (ug/L)	Mn (ug/L)	Ni (ug/L)	K (mg/L)	Na (mg/L)	Zn (ug/L)	NH <sub>3</sub> (mg/L)	TKN (mg/L)	NO <sub>x</sub> (mg/L)	Ortho-P (mg/L)	TP (mg/L)	Cl (mg/L)	Fluoride (mg/L)	SO <sub>4</sub> (mg/L)
				(in)	Rainfall Length (h)			(mg/L)	pH																								
Bren Marr	STMN0811453764	Baseflow	7/1/2021	0.86	16	6/15/2021	125.0	19.4	5.9	7.0	92.6	61.0	91.2	ND	6.2	5.2	18.1	963.0	4.7	959.0	53.0	2.6	2.9	8.9	123.0	0.1	1.2	0.4	ND	0.2	12.1	ND	8.3
Bren Marr	STMN0811453764	First Flush	7/1/2021	0.86	16	6/15/2021	28.7	79.4	6.3	18.9	685.0	393.0	6.0	ND	29.3	32.4	2.9	244.0	ND	1530.0	26.6	1.7	24.9	64.5	ND	1.8	2.9	2.8	ND	ND	99.4	0.2	95.6
Bren Marr	STMN0811453764	Storm Composite	7/1/2021	0.86	16	6/15/2021	ND	43.3	6.7	8.4	339.0	198.0	35.6	ND	15.3	23.3	7.6	366.0	ND	1210.0	15.6	5.4	8.3	29.5	21.4	0.6	1.3	1.2	0.1	0.1	53.7	ND	33.5
Fairfax Water Authority	STMN0442033318	Baseflow	7/1/2021	1.49	18	6/15/2021	40.4	150.0	7.6	16.5	757.0	419.0	58.0	ND	48.1	ND	3.4	969.0	ND	7270.0	137.0	1.3	2.6	82.8	18.4	0.1	0.7	0.7	0.2	0.2	118.0	0.1	8.8
Fairfax Water Authority	STMN0442033318	First Flush	7/1/2021	1.49	18	6/15/2021	151.0	17.4	5.8	12.8	42.5	88.0	158.0	0.5	4.9	2.7	17.9	1420.0	5.0	1300.0	92.7	3.3	1.5	2.9	78.1	ND	1.2	0.3	ND	0.3	4.8	ND	1.5
Fairfax Water Authority	STMN0442033318	Storm Composite	7/1/2021	1.49	18	6/15/2021	ND	12.1	6.1	1.8	58.5	40.0	35.8	ND	3.8	ND	8.1	165.0	ND	645.0	11.8	ND	1.1	5.8	20.7	ND	ND	0.2	ND	0.1	7.5	ND	1.2
Fairfax Water Authority	STMN0442033318	First Flush	10/25/2021	2.58	7	10/16/2021	281.0	150.0	ND	6.3	149.0	127.0	780.0	0.8	37.1	35.0	113.0	25000.0	25.9	13800.0	2020.0	30.3	3.8	12.8	602.0	0.5	4.0	1.1	0.0	1.2	15.4	ND	9.3
Fairfax Water Authority	STMN0442033318	Storm Composite	10/25/2021	2.58	7	10/16/2021	ND	32.4	ND	5.1	99.9	61.0	22.7	ND	10.1	2.8	8.7	632.0	ND	1730.0	32.0	1.8	1.3	7.0	23.9	ND	ND	0.3	0.054	0.1	9.3	ND	1.7
Fairfax Water Authority	STMN0442033318	First Flush	2/2/2022	1.73	36	1/30/2022	197.0	308.0	6.8	15.0	8400.0	4830.0	144.0	ND	99.7	ND	32.7	8100.0	ND	14300.0	643.0	ND	5.7	152.0	285.0	1.2	3.6	1.5	0.1	0.3	2480.0	ND	29.8
Fairfax Water Authority	STMN0442033318	Storm Composite	2/2/2022	1.73	36	1/30/2022	42.8	62.8	6.6	8.2	750.0	392.0	47.1	ND	19.3	3.6	16.4	1920.0	4.2	3540.0	81.4	3.1	13.5	129.0	72.9	0.2	1.4	0.4	ND	0.1	192.0	ND	3.7
Bren Marr	STMN0811453764	Baseflow	2/23/2022	0.62	24	2/13/2022	ND	205.0	6.3	8.9	208.0	824.0	2.5	0.1	54.4	ND	1.9	1500.0	ND	16800.0	180.0	11.0	6.9	164.0	37.0	ND	0.5	2.0	ND	0.3	253.0	ND	27.7
Bren Marr	STMN0811453764	First Flush	2/23/2022	0.62	24	2/13/2022	36.1	16.6	7.0	2.8	96.9	98.0	24.2	ND	5.0	2.1	9.0	1400.0	2.1	980.0	29.0	1.3	1.1	31.3	56.0	0.4	1.3	0.6	ND	0.1	41.0	ND	2.3
Bren Marr	STMN0811453764	Storm Composite	2/23/2022	0.62	24	2/13/2022	40.7	28.7	6.8	5.3	229.0	114.0	43.8	ND	8.5	3.4	15.0	2300.0	3.6	1800.0	47.0	2.2	1.6	35.8	80.0	0.3	0.9	0.6	ND	0.1	50.9	ND	3.5
Bren Marr	STMN0811453764	Baseflow	3/16/2022	0.73	12	3/13/2022	29.6	133.0	7.2	17.0	756.0	416.0	4.9	ND	50.3	57.7	5.0	477.0	ND	1750.0	26.3	2.1	33.9	71.4	ND	2.6	5.1	4.8	ND	0.1	92.6	0.1	105.0
Bren Marr	STMN0811453764	First Flush	3/16/2022	0.73	12	3/13/2022	55.2	51.7	6.9	5.7	1500.0	766.0	19.5	0.23	18.6	14.4	9.6	865.0	1.3	1270.0	31.9	1.8	8.7	275.0	65.9	0.8	2.4	1.4	ND	0.1	342.0	0.2	30.0
Bren Marr	STMN0811453764	Storm Composite	3/16/2022	0.73	12	3/13/2022	41.2	69.3	7.4	7.2	761.0	418.0	12.3	ND	22.2	9.5	6.9	750.0	1.1	3370.0	43.9	2.7	7.8	114.0	36.6	2.7	0.4	1.5	ND	ND	153.0	ND	25.7
Fairfax Water Authority	STMN0442033318	First Flush	4/5/2022	1.25	24	4/1/2022	250.0	95.7	6.9	35.6	286.0	223.0	139.0	1.9	27.3	13.1	42.3	9590.0	8.0	6690.0	401.0	12.2	2.5	25.8	180.0	0.5	4.4	1.0	ND	0.6	45.3	ND	5.8
Fairfax Water Authority	STMN0442033318	Storm Composite	4/5/2022	1.25	24	4/1/2022	39.7	21.9	7.0	8.6	78.9	62.0	42.6	ND	6.5	2.9	11.6	1450.0	2.5	1370.0	45.7	2.4	0.8	9.2	43.5	0.2	0.9	0.4	ND	0.1	11.0	ND	ND
Bren Marr	STMN0811453764	Storm Composite	4/7/2022	0.46	13	4/1/2022	31.2	62.1	7.3	9.8	372.0	207.0	15.6	ND	23.0	23.2	7.2	583.0	1.4	1160.0	20.4	1.6	13.6	35.6	35.9	0.8	2.7	2.1	ND	0.1	48.7	ND	40.4

In Q2 (Oct-Dec, 2021) flow at the Bren Marr location damaged the sampling equipment, so no sample was collected that quarter. An extra sample was collected in Q3 (Jan-Mar, 2022) instead.

In Q4 (Apr-June, 2022) a first flush sample was not collected at Bren Marr due to an equipment malfunction.

**Analyte value was greater than exceedance criterion**

Follow-up actions : All storm event reports with exceedances are sent to our Stormwater Pollution Inspections (SPI) Group for analysis. Zinc and copper are common urban pollutants, originating from roofs and vehicles. Copper can also come from cooling towers, washing activity, or from water flowing through soil such as groundwater seeps into the storm drainage system joints. Elevated copper and zinc concentrations are common in urban and suburban runoff (Davis, Shokouhian and Ni, 2001), (Pitt, Field, Lalor, & Brown, 1995). The SPI group performed a desktop analysis and found that observed values were similar to levels commonly found in drinking water, which is an allowable discharge under the permit.

References:

Pitt, R., R. Field, M. Lalor, and M. Brown. 1995. Urban stormwater toxic pollutants: assessment, sources, and treatability. Water Environment Research, 67(3), 260-275.

Davis, A., M. Shokouhian, and S. Ni. 2001. Loading estimates of lead, copper, cadmium, and zinc in urban runoff from specific sources. Chemosphere, 44(5), 997-1009.

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R11

Summary of Annual Infrastructure Coordination Meetings with VDOT

VSMP Permit Number VA0088587  
9-30-2022

**Infrastructure Coordination Meeting Agenda**  
**January 25<sup>th</sup>, 2022 - 10:00am-12:00pm**  
**Online Meeting / Teleconference**

Attendees:

<b>NVRC</b>	
<b>VDOT</b>	        
<b>Fairfax</b>	  
<b>Arlington</b>	 
<b>Prince William</b>	  

**1. Mapping Updates**

- a. VDOT continues to maintain the [virginiaroads.org](http://virginiaroads.org) site. It includes publicly available data.
  - i. The latest BMPs and Outfall GIS data are located there.
  - ii. VDDOT has updated its application for BMP inspections and expects to have a dashboard available in June 2022.
  - iii. VDOT is using an ARCGIS Collector app to capture updates from field mapping efforts. It includes a new form to capture previously undocumented outfalls.
  - iv. VDOT is also digitizing adopt a highway coordination (moving away from paper).
- b. In April 2021, Fairfax County completed the recurring annual update to their MS4 service area according to the governance process described in our SOP. The updates were relatively minor, consisting of changes related to new infrastructure, updated easement information, & corrections from field staff. By request, the county submitted the Service Area geodatabase to DEQ during our MS4 permit reapplication process. The county is amenable to share the data with adjacent MS4s. We're currently soliciting updates from field staff and are on track to update the service area in 2022.
- c. Arlington County has their new permit and is working on shifting to an outfall based MS4 service area.
- d. Prince William County has not updated their service area, which is outfall based, since 2019. The county is working with DEQ on permit reissuance (scheduled for 6/2022). The county is waiting for updated language and requirements on mapping before making

changes. DEQ shared language from the Arlington County permit with Prince William County. We discussed mapping requirements:

**i. *The permittee map shall clearly delineate gap areas that drain by sheet flow to VDOT MS4 areas not included as part of the Arlington MS4 service area.***

1. This language was not requested by VDOT.
2. This would be a difficult exercise to undertake and each P1 permittee might employ different methods to delineate it.
3. If service areas are outfall based, how is the sheet flow contribution to VDOT ROW useful? It will eventually be discharged from an outfall mapped by the county. We should look at an example and discuss with DEQ to better understand what is DEQ's intent asking for this data.

**ii. *The permittee shall provide written notification within 30 days to any downstream adjacent MS4 of any known physical interconnection established or discovered after the effective date of this permit.***

1. This requirement does not acknowledge the way that Phase1 permitted conveyances are interconnected with VDOT. The storm sewer of one 40-acre sewershed contained 24 interconnections with the VDOT ROW Service Area. This could be over 100,000 interconnections when extrapolated to our 7,000 outfalls and would not be useful information.

**iii. *The permittee shall maintain an information table associated with the storm sewer system map that includes the following information for each outfall or point of interconnection identified in Part I.B.8.c.1).(a):***

- (a) A unique identifier as specified on the storm sewer system map;*
- (b) The latitude and longitude (in decimal degrees) of the outfall, or point of interconnection;*
- (c) The estimated regulated acreage draining to the outfall, or point of interconnection;*
- (d) The name of the receiving water;*
- (e) The 6th Order Hydrologic Unit Code of the receiving water;*
- (f) An indication as to whether the receiving water is listed as impaired in the Virginia 2020 305(b)/303(d) Water Quality Assessment Integrated Report;*
- (g) The predominant land use for each outfall discharging to an impaired water; and Permit No. VA0088579*
- (h) The name of any EPA approved TMDLs for which the permittee is assigned a wasteload allocation.*

1. We determined items (d)-(h) came from the Phase II permit language. How does DEQ think this information will be useful for an MS4 with over 7,000 outfalls? Phase 1 permittees quantify our service area in relation to TMDL & Impaired waters, but this is not useful on an-outfall by-outfall basis when you have thousands of outfalls. The County's IDID, IHRR, DWS and WWS programs look at these and many more attributes of individual outfalls and their sewersheds. Will an example help communicate this? Arlington county made this argument, but DEQ did not alter their permit language.

**2. *Illicit Discharge Detection Elimination***

- a. VDOT's updated IDDE Field Guide has been distributed and adopted by VDOT and contractors. All localities requested a copy of this field guide. Language RE: IDDE and Pollution Prevention has been incorporated into contracts.

- b. Arlington is working on updating their IDDE program based on new permit language. They have a website for reporting illicit discharges.
- c. Fairfax continues to work with VDOT on any expected IDDE. Fairfax is tracking privately managed salt storage in their field investigations.
- d. Prince William did not have updates to mention currently as they are in permit negotiations.

### 3. Chesapeake Bay and Local TMDL Action Plans

- a. Each participant discussed the status on achieving permit-required pollutant reductions associated with the Chesapeake Bay TMDL. Graphs for reductions of TN, TP, and TSS (in lbs/yr) were shared on screen. Chris mentioned that VDOT had communications with Olivia Devereaux, the Chesapeake Assessment Scenario Tool (CAST) Administrator who informed them that VDOT stream restoration projects should not include the Sediment Delivery Ratio (SDR) for TSS reductions because those adjustments are made by CAST and the Chesapeake Bay Watershed Model (WSM). When VDOT removed the SDR from their calculations they're much closer to meeting their required reductions.

*There were subsequent conversations about the need for DEQ to clarify stream restoration reporting requirements related to the SDR. It is Fairfax county's understanding that data sent to the WSM should not include the SDR since the model will apply it. However, the WSM does not supply project specific (or MS4 specific) results. For that reason, MS4 Chesapeake TMDL Action Plan reporting is done in-house and should mirror WSM protocols. Norm will compose a letter to DEQ to highlight the importance of clarifying the guidance to MS4s.*

- b. **Salt Management Strategy (SaMS)** – Norm mentioned that DEQ may be organizing a training event for Summer 2022 targeting government contractors. More information is forthcoming. Participants shared that in-house operators are getting up to speed and implementing SaMS best practices. Incremental progress is in the works to improve contract language, material tracking, outreach to private operators, homeowners, and commercial property managers.
- c. Arlington County will be updating the Bacteria and PCB TMDL Action Plans. There is a new permit requirement to have a public commenting period for these documents.

### 4. Credits for TMDL Implementation

- a. This was discussed during the previous topic. There is only one project underway at this time that is a partnership project (I-495 NEXT). Fairfax County and VDOT are finalizing an MOU on plans to share and report credits. We are planning to reach out to DEQ to get their buy-in before finalizing the MOU. **Follow-up:** DEQ approved the proposed approach on 2/11/2022.

**5. Water Quality Monitoring**

- a. VDOT does not have any specific needs for monitoring data at this time. VDOT's permit does not have a requirement to conduct dry weather screening (DWS).
- b. Arlington County agreed with VDOT that DWS has not been an effective way to locate illicit connections. Visual inspections and testing is better incorporated into their IHRR program, which targets Pollutants of Concern at various hot spots.
- c. Fairfax County's Watershed Assessment Branch continues to collect water quality, biological, and physical habitat data and reiterated that the county can provide the information to VDOT and other partners present if it would be useful for their programs. We're adding SaMS recommended ions to our wet weather monitoring program. Our collaborative efforts with USGS have been effective at developing a more comprehensive picture of water quality. We're using the USGS work to address the DEQ request to report on water quality trends.
- d. Prince William County- DEQ continues to request for a trend analysis. This is difficult to supply with 2 sites monitored quarterly.

**6. Annual Coordination Meetings moving forward**

- a. Norm will set a reminder to re-engage the parties and set up another coordination meeting in the fall of 2022



Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R12

Summary of The Biological Monitoring Results and Analyses and an Interpretation of that Data with Respect to Long-Term Patterns/Trends

VSMP Permit Number VA0088587  
9-30-2022

Fairfax County 2022 MS4 Program Plan and Annual Report  
Appendix R12

During the 2022 permit cycle, the five selected bioassessment sites within Fairfax County were monitored twice for benthic macroinvertebrates and habitat. Fairfax County uses the EPA rapid bioassessment protocol (RBP) multi-habitat benthic survey (20-jab method) and subsamples to approximately 200 individuals, which are identified to the lowest practicable level (usually genus). In order to calculate the Virginia Stream Condition Index (VSCI), the sample is rarified to 110 individuals and then aggregated to family (and some higher-level taxa) for analysis.

Although the benthic macroinvertebrate assemblage scored consistently higher on the Virginia Stream Condition Index (VSCI) in the fall monitoring period compared to the spring (except for a minor increase at flatlick branch), scores ranged from Slightly Impaired (1) to Severely Impaired (3). While the spring samples were dominated by Chironomidae and oligochaetes, most of the fall samples continue to be dominated by tolerant Trichoptera (Philopotamidae and Hydropsychidae) with a distinct lack of Chironomidae and oligochaetes. Additionally, the fall samples held an average of four more taxa than the spring samples.

Fairfax County utilizes stream habitat assessments modified from EPA’s RBP. Certain environmental factors can influence habitat scores such as differing water levels, vegetative growth depending on the season the assessment was done, or antecedent weather conditions.

With respect to trends, a distinct increase in the fall VSCI scores over the spring samples has been consistent at most of the sites over the last four years. It appears there is seasonal variation among Piedmont MS4 sites, requiring further study (outside the scope) of the MS4 permit requirements. Valid long-term trend assessments cannot yet be made with only 5 years of annual data. However, sufficient data has been collected to establish a “baseline” biological condition for these sites.

Site ID	Latitude	Longitude	Season	Virginia SCI (out of 100)	Rating	Habitat Scores (out of 200)
01645704 – Difficult Run	38°53'04.5"	77°19'57.8" NAD27	Fall	35.9	Impaired (2)	104
			Spring	24.1	Impaired (2)	99
01645762 – South Fork Little Difficult Run	38°54'35"	77°20'14.6" NAD27	Fall	54.1	Impaired (1)	101
			Spring	33.2	Impaired (2)	126
01646305 – Dead Run	38°57'34.8"	77°10'33.5" NAD27	Fall	39	Impaired (2)	137
			Spring	15.2	Impaired (3)	152
01654500 – Long Branch	38°48'39"	77°14'07" NAD27	Fall	46.9	Impaired (1)	101
			Spring	17.8	Impaired (3)	97
01656903 – Flatlick Branch	38°52'56.2"	77°25'55.9" NAD27	Fall	23.3	Impaired (2)	87
			Spring	27.7	Impaired (2)	148

Fairfax County 2022 MS4 Program Plan and Annual Report

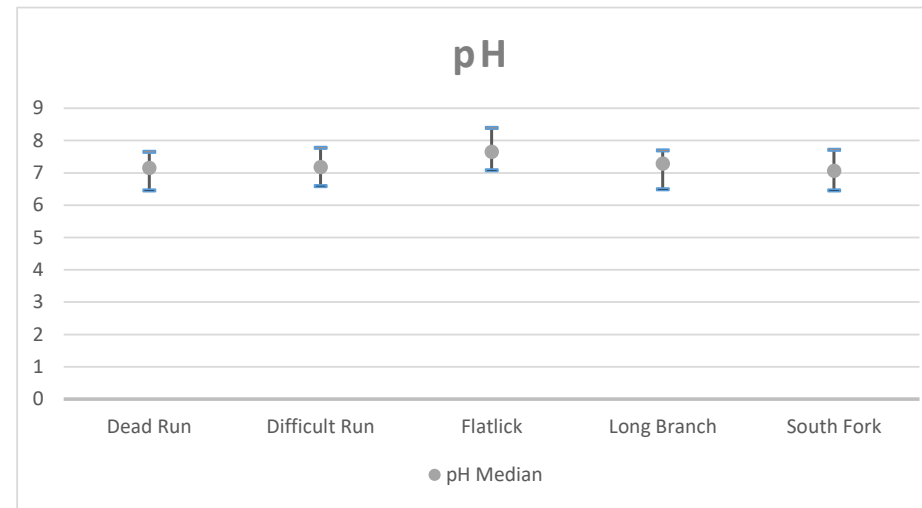
# Appendix R13

In-Stream Monitoring Report

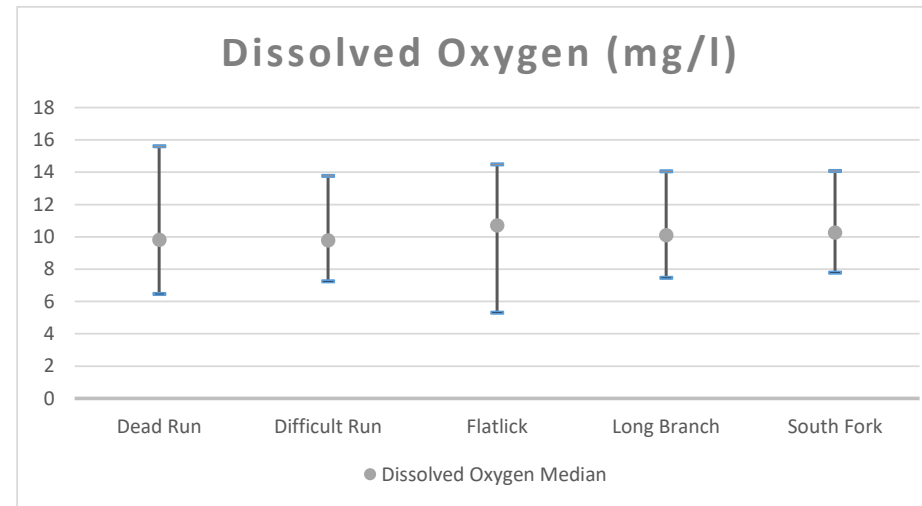
VSMP Permit Number VA0088587  
9-30-2022

The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

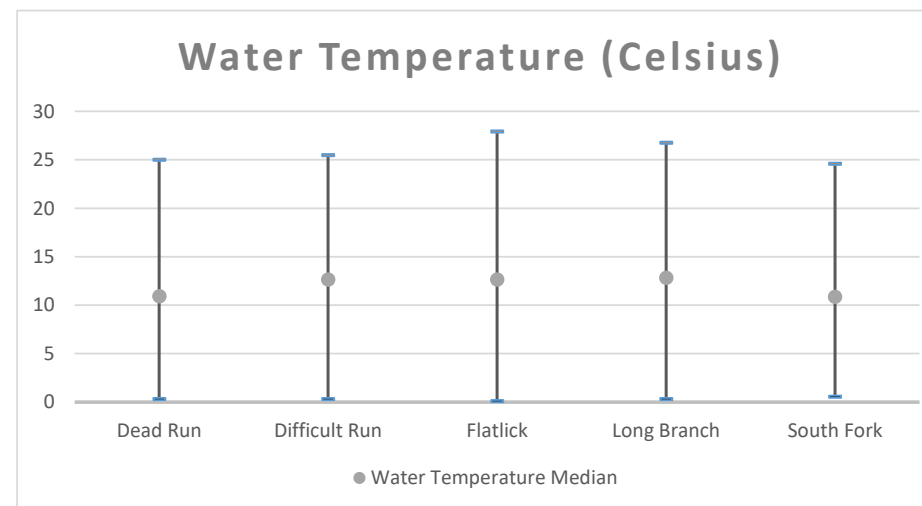
	Latitude	Longitude	pH		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	6.46	7.66	7.16
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	6.6	7.78	7.18
Flatlick	38°52'56.2"	77°25'55.9" NAD27	7.09	8.4	7.66
Long Branch	38°48'39"	77°14'07" NAD27	6.5	7.7	7.29
South Fork	38°54'35"	77°20'14.6" NAD27	6.46	7.72	7.07



	Latitude	Longitude	Dissolved Oxygen		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	6.46	15.61	9.82
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	7.25	13.78	9.785
Flatlick	38°52'56.2"	77°25'55.9" NAD27	5.31	14.48	10.71
Long Branch	38°48'39"	77°14'07" NAD27	7.46	14.06	10.1
South Fork	38°54'35"	77°20'14.6" NAD27	7.79	14.07	10.255

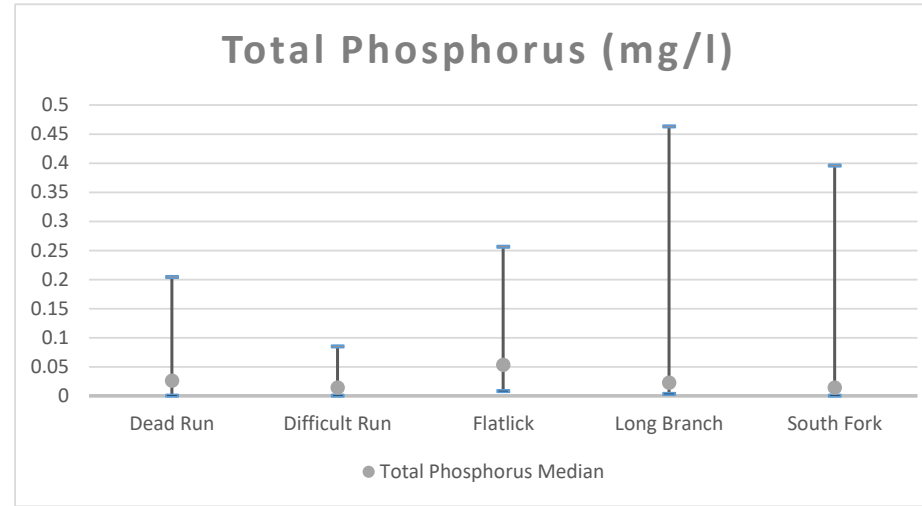


	Latitude	Longitude	Water Temperature		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.305	25.016	10.9255
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.33	25.49	12.6395
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.106	27.91	12.653
Long Branch	38°48'39"	77°14'07" NAD27	0.306	26.747	12.8355
South Fork	38°54'35"	77°20'14.6" NAD27	0.55	24.603	10.87

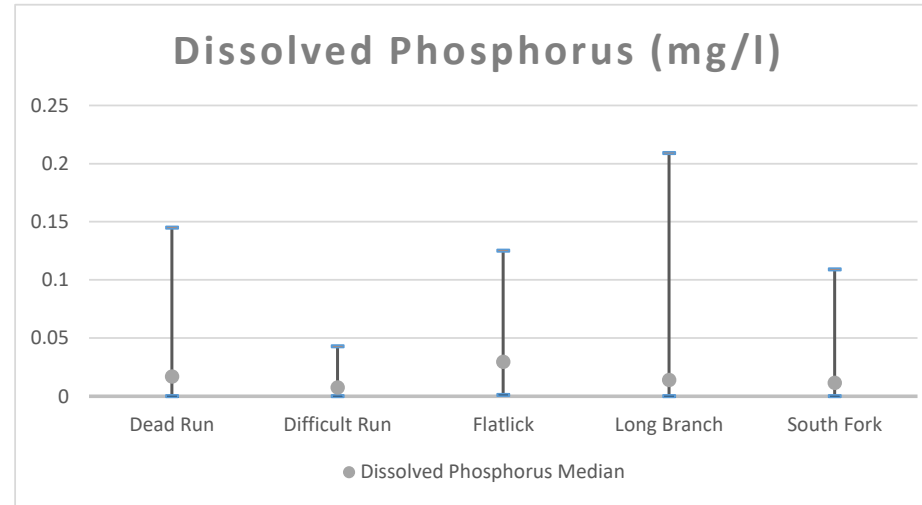


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

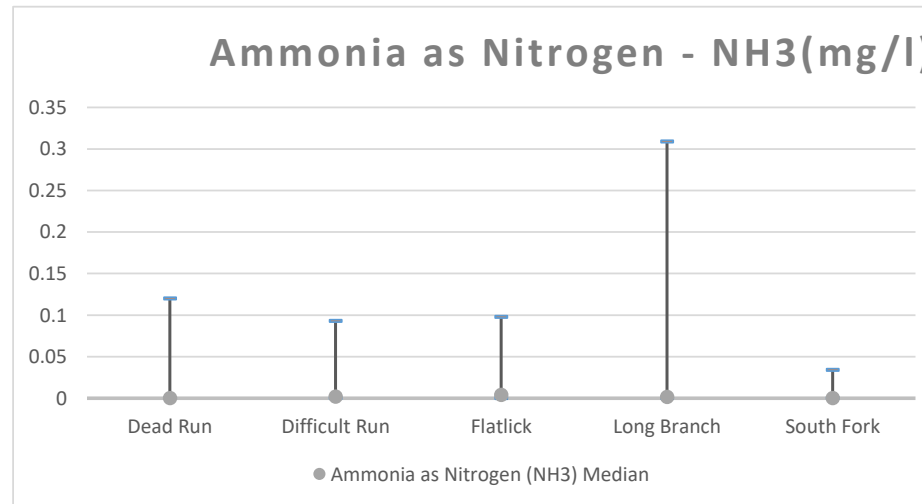
	Latitude	Longitude	Total Phosphorus		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.204	0.026
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.085	0.014
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.008	0.256	0.053
Long Branch	38°48'39"	77°14'07" NAD27	0.003	0.463	0.0225
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.396	0.014



	Latitude	Longitude	Dissolved Phosphorus		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.145	0.017
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.043	0.0075
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.001	0.125	0.0295
Long Branch	38°48'39"	77°14'07" NAD27	0	0.209	0.014
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.109	0.0115

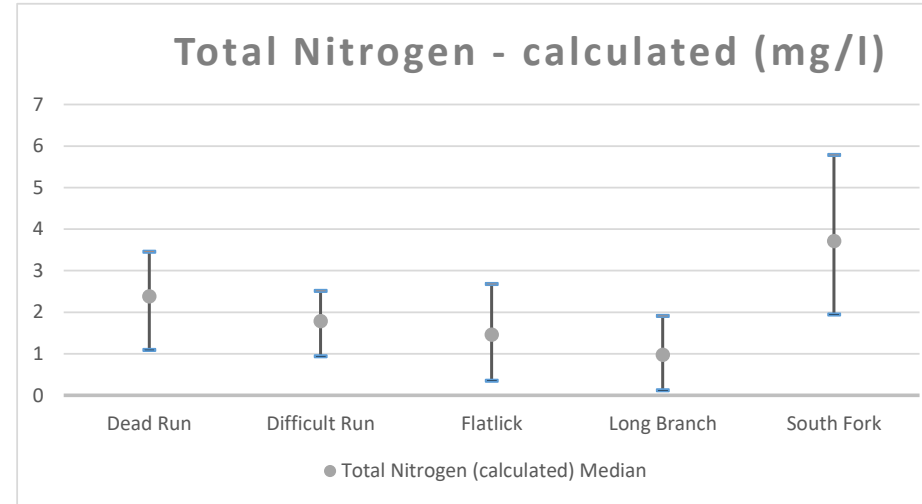


	Latitude	Longitude	Ammonia as Nitrogen (NH3)		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	0.12	0
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0	0.093	0.002
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0	0.098	0.004
Long Branch	38°48'39"	77°14'07" NAD27	0	0.309	0.0015
South Fork	38°54'35"	77°20'14.6" NAD27	0	0.034	0

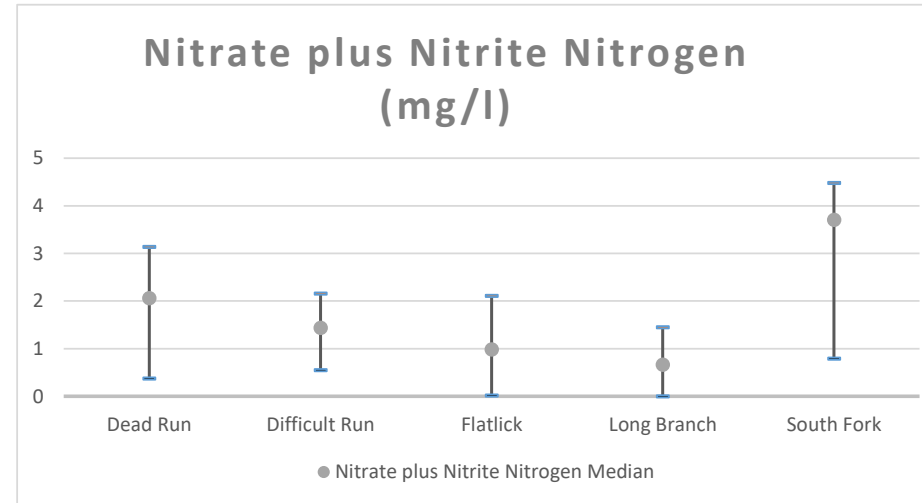


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

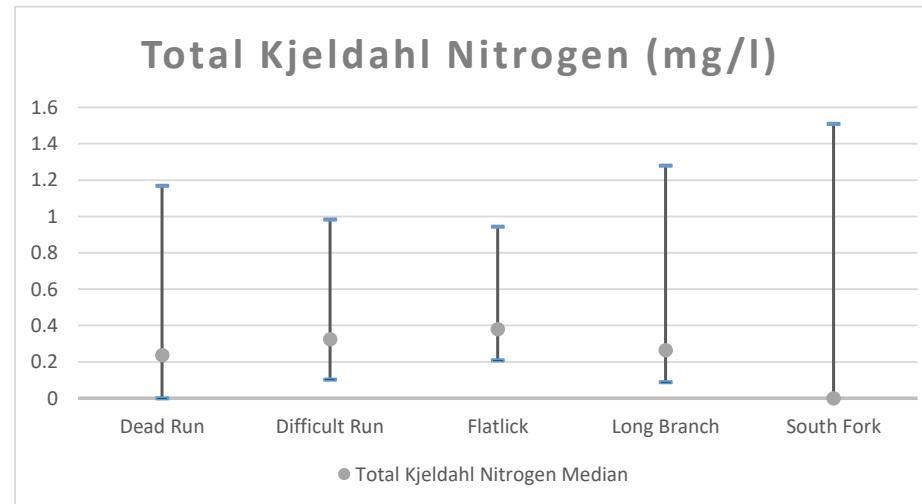
	Latitude	Longitude	Total Nitrogen (calculated)		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	1.09	3.45	2.38
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.937	2.51	1.785
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.346	2.68	1.46
Long Branch	38°48'39"	77°14'07" NAD27	0.121	1.91	0.97
South Fork	38°54'35"	77°20'14.6" NAD27	1.94	5.78	3.71



	Latitude	Longitude	Nitrate plus Nitrite Nitrogen		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.376	3.14	2.065
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.552	2.16	1.44
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.016	2.11	0.984
Long Branch	38°48'39"	77°14'07" NAD27	0	1.45	0.664
South Fork	38°54'35"	77°20'14.6" NAD27	0.79	4.48	3.71



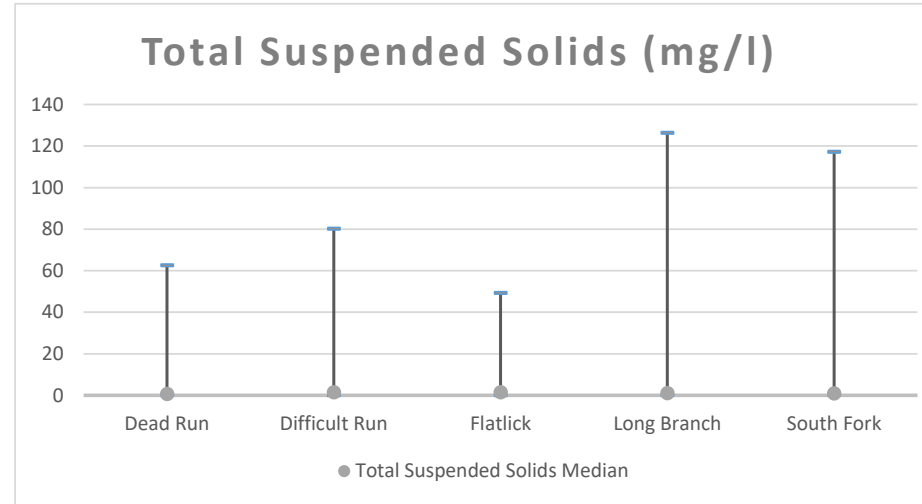
	Latitude	Longitude	Total Kjeldahl Nitrogen		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0	1.17	0.237
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.103	0.984	0.3255
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.209	0.944	0.3795
Long Branch	38°48'39"	77°14'07" NAD27	0.088	1.28	0.264
South Fork	38°54'35"	77°20'14.6" NAD27	0	1.51	0



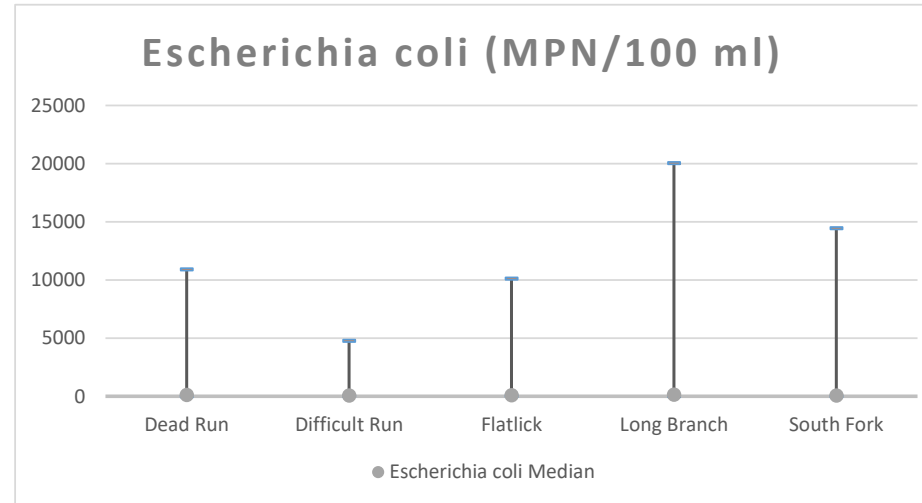


The in-stream monitoring sites began monitoring during reporting period 2017, trends will be evaluated in the future when sufficient data has been gathered.

	Latitude	Longitude	Total Suspended Solids		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	0.1	62.7	0.725
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	0.1	80.3	1.5
Flatlick	38°52'56.2"	77°25'55.9" NAD27	0.1	49.4	1.5
Long Branch	38°48'39"	77°14'07" NAD27	0.1	126.4	1.15
South Fork	38°54'35"	77°20'14.6" NAD27	0.2	117.2	0.95



	Latitude	Longitude	Escherichia coli		
			Min	Max	Median
Dead Run	38°57'34.8"	77°10'33.5" NAD27	2	10910	125.5
Difficult Run	38°53'04.5"	77°19'57.8" NAD27	8	4780	72
Flatlick	38°52'56.2"	77°25'55.9" NAD27	8	10130	88.7
Long Branch	38°48'39"	77°14'07" NAD27	9	20050	142
South Fork	38°54'35"	77°20'14.6" NAD27	3	14450	75



Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R14

A Summary of the Monitoring Results and Analyses from the Floatables  
Monitoring

VSMP Permit Number VA0088587  
9-30-2022

### **Monitoring protocol summary and List of sites sampled**

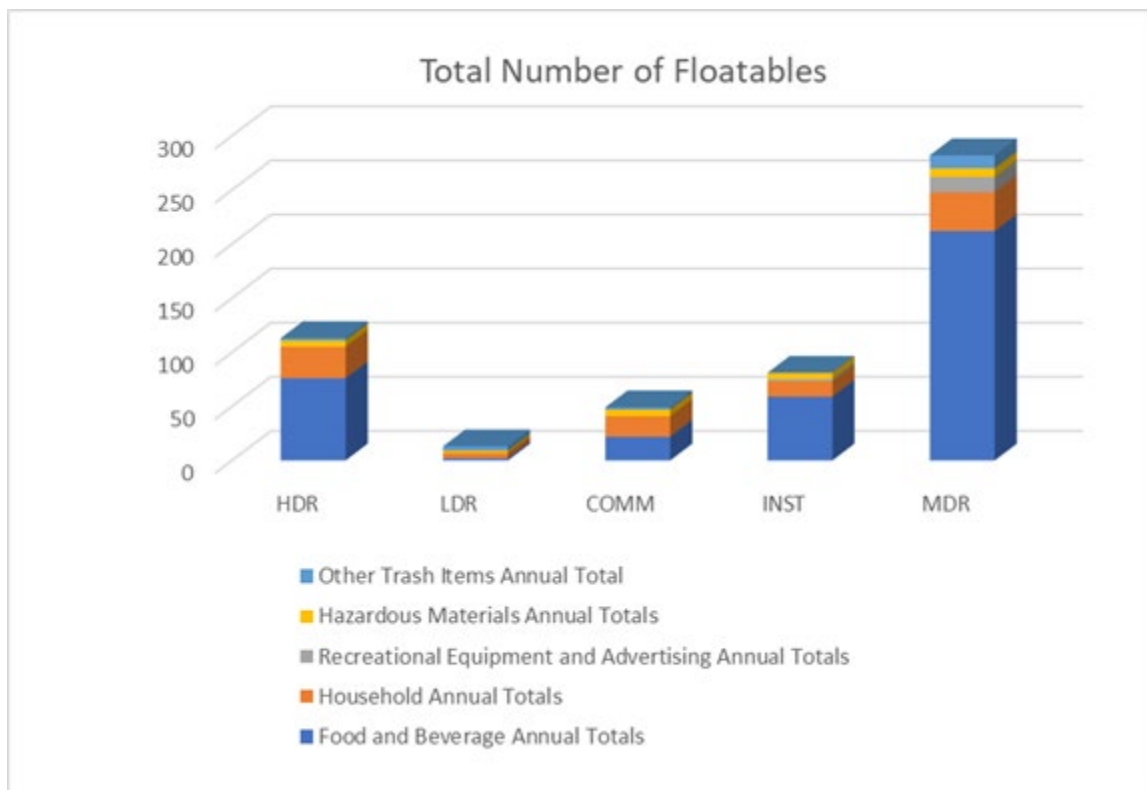
Floatables monitoring was conducted at five (5) monitoring sites located at MS4 outfalls. Sites were chosen to be representative of the primary land cover classes that occur in the MS4 service area: High, Medium, and Low Density Residential, Commercial, and Institutional. The StormNet IDs and land cover classifications for the floatable monitoring sites are:

1. STMN0212404236 - 83% Low Density Residential (LDR)
2. STMN0293016090 - 93% Commercial
3. STMN0583435398 - 89% Institutional
4. STMN0651048577 - 100% Medium Density Residential (MDR)
5. STMN0791456509 - 87% High Density Residential (HDR)

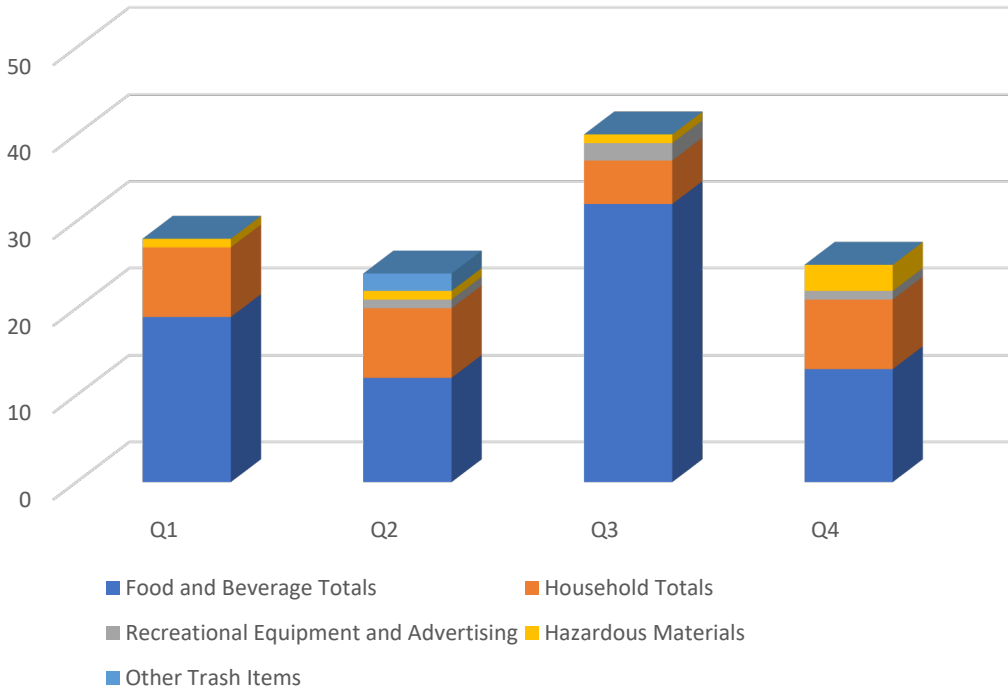
Monitoring is conducted once per quarter. During monitoring events, staff count the number of floatables visually observed within the bank full area for 100 linear feet below the MS4 outfall. Staff remove all litter all from sites immediately after floatable counts are recorded in order to prevent the potential to double-count floatables.

### **Summary of Monitoring Results**

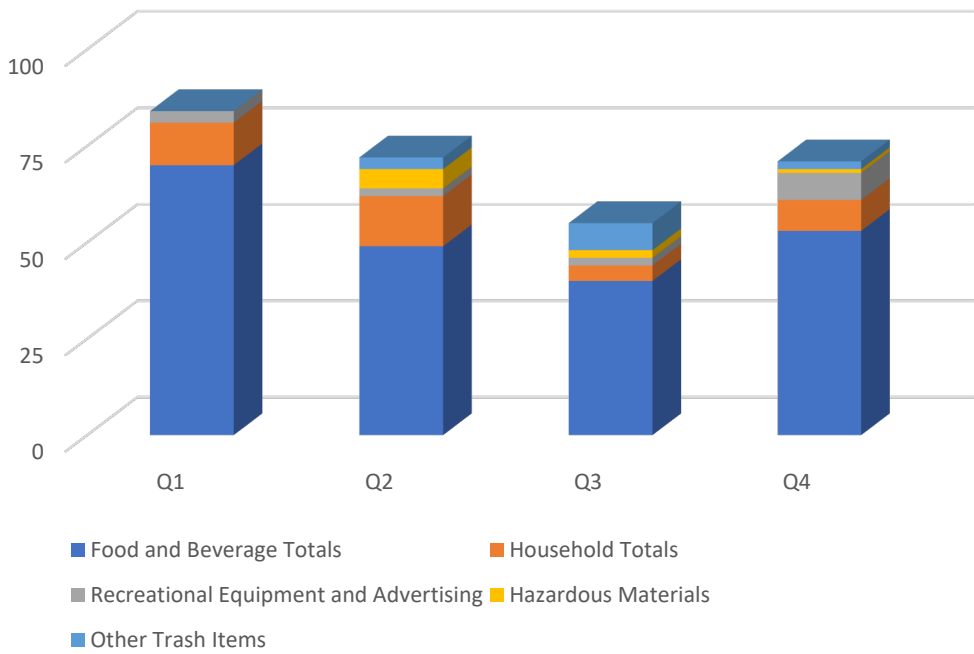
Floatables are consistently found in the highest numbers at the medium density residential site, and in the lowest numbers at the low-density residential site. Food and beverage containers, such as bottles, plastic bags, and wrappers are typically found in highest numbers across all of the sites. Staff have noted that improper disposal of floatables is occurring along the riparian area of some sites and some portion of the floatables does not originate from the MS4 outfall. This is most evident at the MDR and COMM sites.



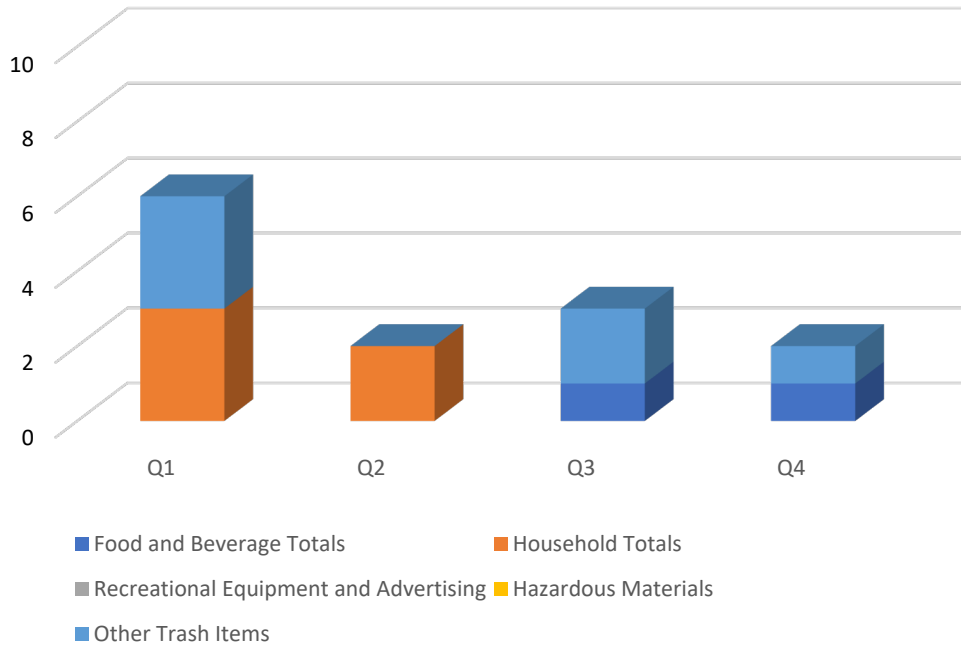
### Number of Floatables-High Denisty Residential



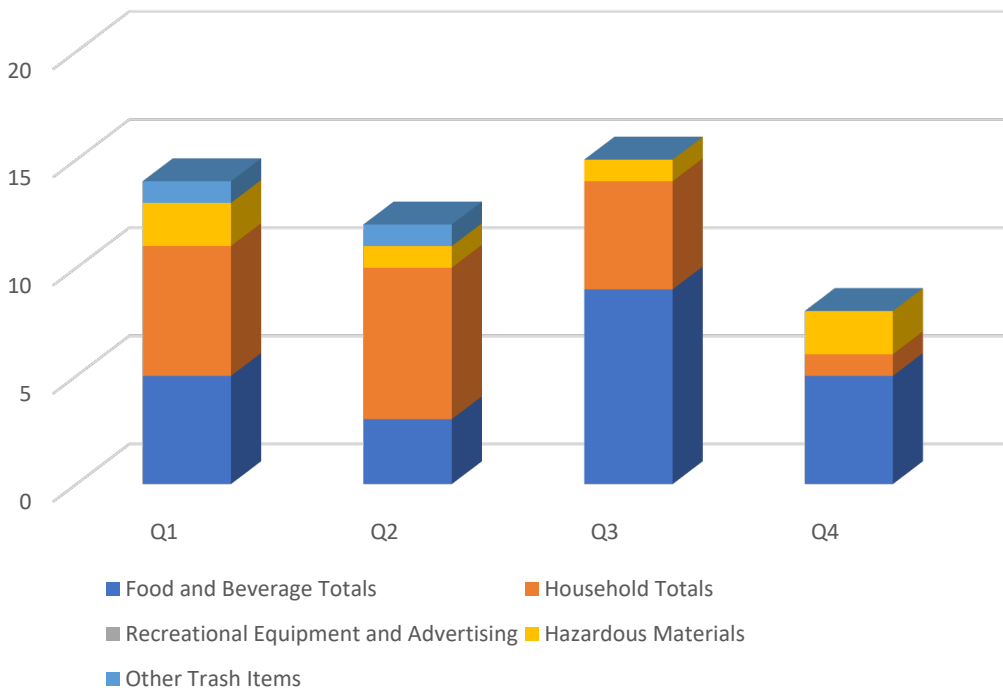
### Number of Floatables- Medium Denisty Residential Site



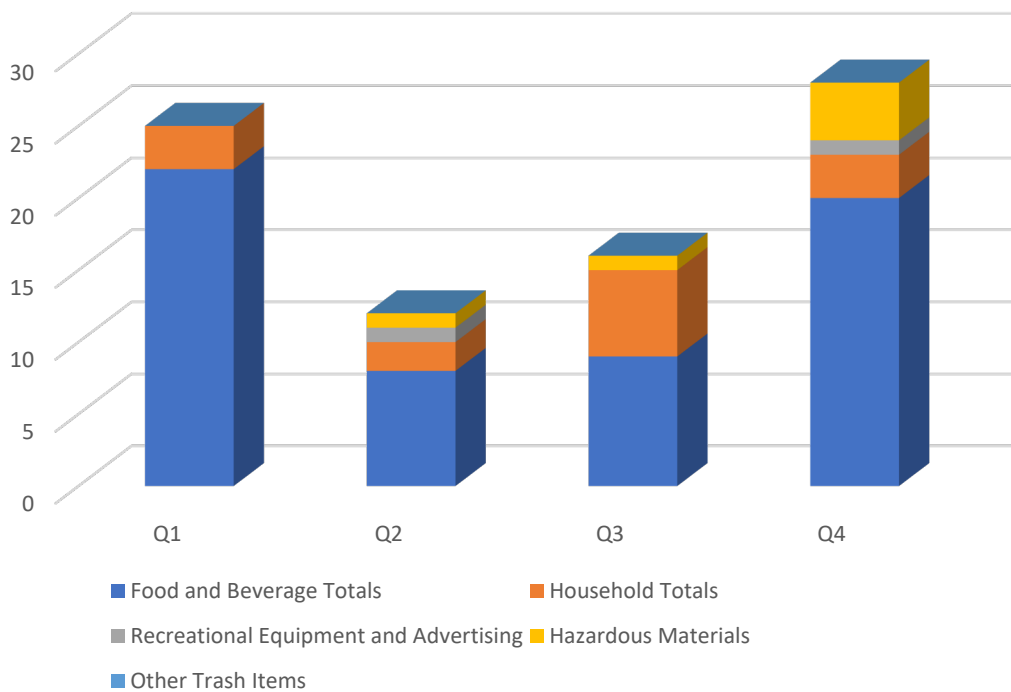
### Number of Floatables- Low Density Residential



### Number of Floatables- Commercial Site



### Number of Floatables- Institutional Site





Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R15

Database of SWM Facilities Brought Online  
During the Reporting Period  
(FY22\_FairfaxCounty\_BMPData.xlsx)

VSMP Permit Number VA0088587  
9-30-2022

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
2166BR	1329S	Public	8/10/2021	BIORETENTION	0.45	0.00	FY23	1775 Old Meadow Ln.	McLean, VA 22102	YES	38.91917002	-77.21472462	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
2167BR	1329S	Public	8/10/2021	BIORETENTION	0.18	0.00	FY23	1775 Old Meadow Ln.	McLean, VA 22102	YES	38.91894687	-77.21487558	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
2168BR	1329S	Public	8/10/2021	BIORETENTION	0.00	0.00	FY23	1775 Old Meadow Ln.	McLean, VA 22102	YES	38.91899527	-77.21512133	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
2169BR	1329S	Public	8/10/2021	BIORETENTION	0.03	0.00	FY23	1775 Old Meadow Ln.	McLean, VA 22102	YES	38.91874978	-77.21482045	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
2170VS	1329S	Public	8/10/2021	VEGETATED SWALE	0.13	0.00	FY23	1775 Old Meadow Ln.	McLean, VA 22102	YES	38.91875553	-77.21500082	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
2171DP	1330S	Public	8/2/2021	DRY POND (PEAK SHAVER)	6.16	10.44	9/27/2021	8986 Shadowlake Wy: at right and 250ft behind	Springfield, VA 22153	NO	38.75113271	-77.2512356	PL29	Pohick Creek	VAN-A16R_MID01A16	Yes	No
2172DP	1331S	Public	8/3/2021	EXTENDED DETENTION DRY POND	2.82	3.64	FY23	behind 9057 Chynoweth St.	Lorton, VA 22079	NO	38.71222508	-77.19138601	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
PP0105	FCPA0134	Public	1/11/2022	PERMEABLE PAVEMENT	0.12	0.00	FY23	7701 Royce St	Annandale, VA 22003	YES	38.83922715	-77.21146412	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
UG0832	FCPA0135	Public	2/23/2022	UNDERGROUND DETENTION	2.62	0.82	FY23	6601 Telegraph Rd	Alexandria, VA 22310	YES	38.773624	-77.10991771	PL27	Dogue Creek	VAN-A14R_ZZZ27A00	No	No
UG0833	FCPA0135	Public	2/23/2022	UNDERGROUND DETENTION	0.66	0.00	FY23	6601 Telegraph Rd	Alexandria, VA 22310	YES	38.77430967	-77.10931662	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
UG0831	FCPS0114	Public	2/23/2022	UNDERGROUND DETENTION	4.50	0.00	FY23	3000 Chain Bridge Rd	Oakton, VA 22124	NO	38.88003514	-77.30603033	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1869	S0577	Private	7/29/2021	INFILTRATION PRACTICE	0.25	0.00	5/20/2022	1219 Swinks Mill Rd.	McLean, VA 22102	YES	38.940815	-77.21481889	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
GR0032	S0752	Private	7/1/2022	VEGETATED ROOF	0.12	0.00	6/24/2021	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	38.93053265	-77.24093003	PL22	Difficult Run	VAN-A11R_ROE01A08	No	No
GR0033	S0752	Private	7/1/2022	VEGETATED ROOF	0.08	0.00	6/24/2021	1521 Boyd Pointe Wy.	Vienna, VA 22182	YES	38.93055742	-77.24085387	PL22	Difficult Run	VAN-A11R_ROE01A08	No	No
DP0756	S0774	Private	9/7/2021	DRY POND (PEAK SHAVER)	1.40	0.00	10/25/2021	1764-A Old Meadow Ln.	McLean, VA 22102	NO	38.91957471	-77.2126397	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
TR1907	S0783	Private	7/18/2022	INFILTRATION PRACTICE	1.07	0.00	FY23	1307 Potomac School Rd.	McLean, VA 22101	YES	38.93489896	-77.15376891	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
MB0345	S1287	Private	10/11/2021	MANUFACTURED BMP (PROPRIETARY)	3.05	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87259841	-77.37400289	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0346	S1287	Private	10/11/2021	MANUFACTURED BMP (PROPRIETARY)	2.68	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87227735	-77.37318573	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0347	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.31	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87346238	-77.37447794	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0348	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.31	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87338039	-77.37455424	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0349	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.25	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87297348	-77.37475023	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0350	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.14	0.03	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87283877	-77.37481165	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
TF0614	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.21	0.11	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87283039	-77.37512415	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
TF0615	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.27	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87242747	-77.37407421	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
TF0616	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.32	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87239104	-77.3739793	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
TF0617	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.30	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87206044	-77.37289016	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
TF0618	S1287	Private	10/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.54	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87252344	-77.37297575	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
UG0817	S1287	Private	10/12/2021	UNDERGROUND DETENTION	11.89	0.00	6/17/2022	3903 Fair Ridge Dr.	Fairfax, VA 22033	YES	38.87249732	-77.37355828	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
BR0933	S3983	Private	7/18/2022	BIORETENTION	0.24	0.00	FY23	7921 JONES BRANCH DR	MCLEAN, VA 22102	YES	38.92849876	-77.21843386	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
TR1847	S4108	Private	7/29/2021	INFILTRATION PRACTICE	0.09	0.00	4/13/2022	1328 Kurt Rd.	McLean, VA 22101	YES	38.93503564	-77.17198203	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1848	S4110	Private	7/26/2021	INFILTRATION PRACTICE	0.03	0.00	3/31/2022	6531 Chesterfield Av.	McLean, VA 22101	YES	38.91513035	-77.16911924	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1008	S4112	Private	7/26/2021	BIORETENTION	0.03	0.00	4/28/2022	7812 W Boulevard Dr.	Alexandria, VA 22308	YES	38.74531019	-77.04942844	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR1009	S4112	Private	7/26/2021	BIORETENTION	0.01	0.00	4/28/2022	7812 W Boulevard Dr.	Alexandria, VA 22308	YES	38.74515579	-77.0493227	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR1010	S4116	Private	7/30/2021	BIORETENTION	0.03	0.00	5/5/2022	7611 Leonard Dr.	Falls Church, VA 22043	YES	38.91251336	-77.20801187	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1849	S4117	Private	7/30/2021	INFILTRATION PRACTICE	0.04	0.00	4/5/2022	2021 Maynard Dr.	Falls Church, VA 22043	YES	38.90815275	-77.2015303	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1011	S4119	Private	7/26/2021	BIORETENTION	0.03	0.00	5/20/2022	1558 Great Falls St.	McLean, VA 22101	YES	38.92742421	-77.19713054	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1850	S4120	Private	7/27/2021	INFILTRATION PRACTICE	0.04	0.00	4/13/2022	1477 Waggam Cir.	McLean, VA 22101	YES	38.93366605	-77.16739073	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
TR1851	S4123	Private	7/27/2021	INFILTRATION PRACTICE	0.09	0.00	5/12/2022	6437 Windham Av.	Alexandria, VA 22315	YES	38.76460337	-77.16143011	PL30	Accotink Creek	VAN-A15R_LOA01A08	Yes	No
TR1852	S4125	Private	8/10/2021	INFILTRATION PRACTICE	0.18	0.00	4/19/2022	6515 Ridge St.	McLean, VA 22101	YES	38.9456248	-77.16616328	PL23	Turkey Run	VAN-A11R_TUY01A06	Yes	No
BR1012	S4127	Private	8/10/2021	BIORETENTION	0.03	0.00	5/5/2022	1801 Pimmit Dr.	Falls Church, VA 22043	YES	38.91912647	-77.19628323	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1853	S4128	Private	8/10/2021	INFILTRATION PRACTICE	0.03	0.00	4/20/2022	1751 Pimmit Dr.	Falls Church, VA 22043	YES	38.919815	-77.19662089	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1854	S4129	Private	8/10/2021	INFILTRATION PRACTICE	0.26	0.00	6/3/2022	1101 Jonquil Cir.	Great Falls, VA 22066	YES	38.97404682	-77.28733329	PL22	Difficult Run	VAN-A11R_DIF01B06	Yes	No
TR1855	S4130	Private	8/10/2021	INFILTRATION PRACTICE	0.04	0.00	6/9/2022	9936 Woodrow St.	Vienna, VA 22181	YES	38.90626274	-77.29019616	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1857	S4134	Private	8/10/2021	INFILTRATION PRACTICE	0.08	0.00	5/13/2022	1533 Forest Ln.	McLean, VA 22101	YES	38.92692134	-77.13589217	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1858	S4135	Private	8/10/2021	INFILTRATION PRACTICE	0.04	0.00	4/5/2022	1915 Pice Pl	Falls Church, VA 22043	YES	38.91372083	-77.19177707	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1013	S4136	Private	8/10/2021	BIORETENTION	0.05	0.00	5/5/2022	7621 Leonard Dr.	Falls Church, VA 22043	YES	38.91172801	-77.20873233	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1859	S4137	Private	8/10/2021	INFILTRATION PRACTICE	0.04	0.00	4/20/2022	2033 Griffith Rd.	Falls Church, VA 22043	YES	38.90828467	-77.19785194	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1014	S4139	Private	8/10/2021	BIORETENTION	0.02	0.00	5/5/2022	2034 Cherri Dr.	Falls Church, VA 22043	YES	38.90960917	-77.20103605	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1860	S4140	Private	8/10/2021	INFILTRATION PRACTICE	0.03	0.00	4/14/2022	6815 Wemberley Wy.	McLean, VA 22101	YES	38.95882537	-77.18030303	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR1015	S4142	Private	8/10/2021	BIORETENTION	0.08	0.00	5/4/2022	7011 DunCraig Ct.	McLean, VA 22101	YES	38.95364784	-77.18615051	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR1016	S4145	Private	8/11/2021	BIORETENTION	0.02	0.00	5/13/2022	6207 Kellog Dr.	McLean, VA 22101	YES	38.92923876	-77.15060348	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	No
TR1862	S4147	Private	8/11/2021	INFILTRATION PRACTICE	0.05	0.00	6/2/2022	4415 Glenn Rose St.	Fairfax, VA 22032	YES	38.82788597	-77.27050606	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TR1863	S4149	Private	8/11/2021	INFILTRATION PRACTICE	0.05	0.00	5/27/2022	811 Touchstone Ter.	McLean, VA 22102	YES	38.93909305	-77.2262287	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
BR1017	S4150	Private	8/11/2021	BIORETENTION	0.05	0.00	5/9/2022	1436 Mayflower Dr.	McLean, VA 22101	YES	38.93325424	-77.19237048	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
TR1866	S4153	Private	9/13/2021	INFILTRATION PRACTICE	0.03	0.00	6/16/2022	6450 Johns Rd.	Falls Church, VA 22043	YES	38.91051404	-77.16470779	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1867	S4154	Private	9/13/2021	INFILTRATION PRACTICE	0.00	0.02	4/20/2022	1744 Pimmit Dr.	Falls Church, VA 22043	YES	38.92058039	-77.19730263	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1018	S4156	Private	9/22/2021	BIORETENTION	0.04	0.00	6/3/2022	825 Constellation Dr.	Great Falls, VA Dr. 22066	YES	38.99246006	-77.28926611	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR1019	S4156	Private	9/22/2021	BIORETENTION	0.06	0.01	6/3/2022	825 Constellation Dr.	Great Falls, VA Dr. 22066	YES	38.99278046	-77.28912322	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR1020	S4157	Private	9/22/2021	BIORETENTION	0.03	0.00	5/13/2022	1448 Woodacre Dr.	McLean, VA 22101	YES	38.93106151	-77.13683401	PL24	Pimmit Run	VAN-A12R_PIM01A00	Yes	No

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
BR1021	S4157	Private	9/22/2021	BIORETENTION	0.04	0.00	5/13/2022	1448 Woodacre Dr.	McLean, VA 22101	YES	38.93121193	-77.1365992	PL24	Pimmit Run	VAN-A12R_PIM01A00	Yes	No
TR1868	S4158	Private	9/22/2021	INFILTRATION PRACTICE	0.14	0.00	6/3/2022	1048 Rector Ln.	McLean, VA 22102	YES	38.95453702	-77.23146531	PL23	Bull Neck Run	VAN-A11R_ZZZ23A00	No	No
TR1870	S4160	Private	9/22/2021	INFILTRATION PRACTICE	0.06	0.00	4/13/2022	1508 Linden Hurst Ave.	McLean, VA 22101	YES	38.92959228	-77.17842317	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1871	S4162	Private	9/22/2021	INFILTRATION PRACTICE	0.06	0.00	4/14/2022	7203 Elizabeth Dr.	McLean, VA 22101	YES	38.9424498	-77.19306497	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR1022	S4164	Private	11/12/2021	BIORETENTION	0.14	0.00	FY23	1836 Birch Rd	McLean, VA 22101	NO	38.9156662	-77.16489292	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
TR1872	S4164	Private	11/12/2021	INFILTRATION PRACTICE	0.14	0.04	FY23	1836 Birch Rd	McLean, VA 22101	NO	38.9153914	-77.16497144	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	No
TR1873	S4166	Private	11/12/2021	INFILTRATION PRACTICE	0.08	0.00	FY23	2462 Flint Hill Rd	Vienna, VA 22181	NO	38.89570249	-77.28364162	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
TR1874	S4169	Private	11/12/2021	INFILTRATION PRACTICE	0.03	0.02	FY23	7213 Farr St	Annandale, VA 22003	YES	38.83649421	-77.19526315	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
BR1025	S4170	Private	7/1/2022	BIORETENTION	0.01	0.00	FY23	8412 Crossley Pl	Alexandria, VA 22308	YES	38.72807943	-77.05683428	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR1026	S4171	Private	11/12/2021	BIORETENTION	0.08	0.05	FY23	7228 Timber Ln	Falls Church, VA 22046	YES	38.88305698	-77.1962627	PL26	Cameron Run	VAN-A13R_TRI01A00	Yes	No
TR1864	S4173	Private	9/30/2021	INFILTRATION PRACTICE	0.09	0.00	6/3/2022	908 Walker Rd.	Great Falls, VA 22066	YES	38.98762255	-77.28803871	PL22	Difficult Run	VAN-A11R_CAH01A04	Yes	No
MB0341	S4202	Private	10/6/2021	MANUFACTURED BMP (PROPRIETARY)	2.36	0.00	6/23/2022	14847 Murdock St.	Chantilly, VA 20151	YES	38.91244197	-77.46171922	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0342	S4202	Private	10/6/2021	MANUFACTURED BMP (PROPRIETARY)	1.14	0.00	6/23/2022	14847 Murdock St.	Chantilly, VA 20151	YES	38.91235316	-77.46109861	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0343	S4202	Private	10/6/2021	MANUFACTURED BMP (PROPRIETARY)	1.48	0.00	6/23/2022	14847 Murdock St.	Chantilly, VA 20151	YES	38.91262075	-77.46235719	PL45	Cub Run	VAN-A22R_CU02A02	Yes	No
TF0613	S4202	Private	10/6/2021	MANUFACTURED BMP (PROPRIETARY)	0.10	0.00	6/23/2022	14847 Murdock St.	Chantilly, VA 20151	YES	38.91243963	-77.46142134	PL45	Cub Run	VAN-A22R_ZZZ45A00	No	No
MB0344	S4203	Private	10/7/2021	MANUFACTURED BMP (PROPRIETARY)	0.22	0.00	4/28/2022	adjacent to 6025 Florence Ln.	Alexandria, VA 22310	YES	38.78565664	-77.08747232	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TR1893	S4204	Private	10/7/2021	INFILTRATION PRACTICE	0.41	0.34	6/6/2022	adjacent to 6561 Brooks Pl	Falls Church, VA 22044	YES	38.84861834	-77.16970735	PL26	Cameron Run	VAN-A13R_HOR01B00	Yes	No
TR1894	S4204	Private	10/7/2021	INFILTRATION PRACTICE	0.36	0.29	6/6/2022	adjacent to 6560 Brooks Pl	Falls Church, VA 22044	YES	38.84888773	-77.16932977	PL26	Cameron Run	VAN-A13R_HOR01B00	Yes	No
PP0101	S4205	Private	10/7/2021	PERMEABLE PAVEMENT	0.03	0.00	5/5/2022	8753 Richmond Hy.	Alexandria, VA 22309	YES	38.71896412	-77.12725868	PL27	Dogue Creek	VAN-A14R_DOU01A04	Yes	No
PP0102	S4205	Private	10/7/2021	PERMEABLE PAVEMENT	0.03	0.03	5/5/2022	8753 Richmond Hy.	Alexandria, VA 22309	YES	38.71911128	-77.1273026	PL27	Dogue Creek	VAN-A14R_DOU01A04	Yes	No
PP0103	S4205	Private	10/7/2021	PERMEABLE PAVEMENT	0.04	0.04	5/5/2022	8753 Richmond Hy.	Alexandria, VA 22309	YES	38.71924793	-77.12702038	PL27	Dogue Creek	VAN-A14R_DOU01A04	Yes	No
PP0104	S4205	Private	10/7/2021	PERMEABLE PAVEMENT	0.02	0.02	5/5/2022	8753 Richmond Hy.	Alexandria, VA 22309	YES	38.71920798	-77.12678601	PL27	Dogue Creek	VAN-A14R_DOU01A04	Yes	No
BR1045	S4207	Private	10/7/2021	BIORETENTION	0.02	0.00	6/20/2022	6521 Roosevelt St.	Falls Church, VA 22043	YES	38.89992377	-77.16808258	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	No
BR1046	S4207	Private	10/8/2021	BIORETENTION	0.03	0.00	6/20/2022	6521 Roosevelt St.	Falls Church, VA 22043	YES	38.8997964	-77.16807876	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	No
UG0818	S4208	Private	10/8/2021	UNDERGROUND DETENTION	0.06	0.00	4/28/2022	8013 Yorktown Dr.	Alexandria, VA 22308	NO	38.73933346	-77.05479521	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0819	S4208	Private	10/8/2021	UNDERGROUND DETENTION	0.06	0.00	4/28/2022	8015 Yorktown Dr.	Alexandria, VA 22308	NO	38.73910523	-77.0546485	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0820	S4209	Private	10/8/2021	UNDERGROUND DETENTION	0.06	0.00	4/28/2022	8043 Washington Rd.	Alexandria, VA 22308	NO	38.739378	-77.05570457	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0821	S4210	Private	10/8/2021	UNDERGROUND DETENTION	0.06	0.00	4/28/2022	8027 Washington Rd.	Alexandria, VA 22308	NO	38.73849243	-77.05724178	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0822	S4211	Private	10/8/2021	UNDERGROUND DETENTION	0.05	0.00	5/5/2022	8037 Washington Rd.	Alexandria, VA 22308	NO	38.73808956	-77.05620509	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
UG0823	S4211	Private	10/8/2021	UNDERGROUND DETENTION	0.05	0.00	4/28/2022	8039 Washington Rd.	Alexandria, VA 22308	NO	38.73802697	-77.05602215	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
TR1895	S4212	Private	10/8/2021	INFILTRATION PRACTICE	0.05	0.00	4/11/2022	7602 Leonard Dr.	Falls Church, VA 22043	YES	38.91323645	-77.20725663	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
UG0824	S4213	Private	10/8/2021	UNDERGROUND DETENTION	0.04	0.00	4/11/2022	7505 Lisle Av.	Falls Church, VA 22043	YES	38.91643473	-77.20377476	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
UG0825	S4214	Private	10/8/2021	UNDERGROUND DETENTION	0.04	0.00	4/11/2022	7605 Leonard Dr.	Falls Church, VA 22043	YES	38.91284918	-77.20735876	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1896	S4215	Private	10/8/2021	INFILTRATION PRACTICE	0.03	0.00	4/11/2022	7532 Lisle Av.	Falls Church, VA 22043	YES	38.91463856	-77.20730002	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
TR1897	S4216	Private	10/11/2021	INFILTRATION PRACTICE	0.06	0.00	4/5/2022	1942 Storm Dr.	Falls Church, VA 22043	YES	38.9110231	-77.19906001	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1047	S4217	Private	9/7/2021	BIORETENTION	0.01	0.00	FY23	7703 Fisher Dr	Falls Church, VA 22043	YES	38.91117506	-77.21063507	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1048	S4217	Private	9/7/2021	BIORETENTION	0.00	0.00	FY23	7703 Fisher Dr	Falls Church, VA 22043	YES	38.91123619	-77.21080173	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1049	S4217	Private	9/7/2021	BIORETENTION	0.03	0.00	FY23	7703 Fisher Dr	Falls Church, VA 22043	YES	38.91111869	-77.2108615	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1050	S4217	Private	9/7/2021	BIORETENTION	0.02	0.00	FY23	7703 Fisher Dr	Falls Church, VA 22043	YES	38.91110694	-77.21066291	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1898	S4218	Private	7/1/2022	INFILTRATION PRACTICE	0.03	0.06	FY23	1920 Griffith Rd	Falls Church, VA 22043	YES	38.91280739	-77.20089394	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1051	S4219	Private	9/7/2021	BIORETENTION	0.01	0.00	FY23	1805 Gilson St	Falls Church, VA 22043	YES	38.91836665	-77.19694368	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1899	S4220	Private	9/7/2021	INFILTRATION PRACTICE	0.03	0.03	FY23	1809 Gilson St	Falls Church, VA 22043	YES	38.91801365	-77.19659068	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
BR1052	S4221	Private	9/7/2021	BIORETENTION	0.05	0.01	FY23	7103 Elizabeth Dr	McLean, VA 22101	YES	38.94295209	-77.19008401	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
TR1900	S4222	Private	9/7/2021	INFILTRATION PRACTICE	0.04	0.02	FY23	2038 Freedom Ln	Falls Church, VA 22043	YES	38.90735808	-77.16478206	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1901	S4223	Private	9/7/2021	INFILTRATION PRACTICE	0.06	0.00	FY23	1206 Alden Rd	Alexandria, VA 22308	YES	38.71984221	-77.05553958	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
TR1902	S4224	Private	9/7/2021	INFILTRATION PRACTICE	0.13	0.00	FY23	6800 Somel St	McLean, VA 22101	YES	38.95380843	-77.17731004	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	No
BR1053	S4225	Private	7/1/2022	BIORETENTION	0.06	0.10	FY23	6002 Claiborne Dr	McLean, VA 22101	YES	38.93588852	-77.14045404	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	No
SF0281	S4226	Private	9/7/2021	FILTERING PRACTICE	0.19	0.10	FY23	13655 Lee Jackson Memorial Hwy	Chantilly, VA 20151	YES	38.88910551	-77.41928728	PL45	Cub Run	VAN-A22R_FL02A14	Yes	No
MB0351	S4227	Private	11/12/2021	MANUFACTURED BMP (PROPRIETARY)	0.54	0.17	FY23	6220 Richmond Hwy	Alexandria, VA 22303	YES	38.7832813	-77.07614519	PL26	Belle Haven	VAN-A13R_ZZZ26A00	No	No
VS0060	S4227	Private	11/12/2021	VEGETATED SWALE	0.13	0.07	FY23	6220 Richmond Hwy	Alexandria, VA 22303	YES	38.78297594	-77.07731611	PL26	Belle Haven	VAN-A13R_ZZZ26A00	No	No
TR1875	S4228	Private	11/12/2021	INFILTRATION PRACTICE	0.06	0.00	FY23	1600 Forest Ln	McLean, VA 22101	NO	38.92644844	-77.13726799	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	No
TR1876	S4229	Private	11/12/2021	INFILTRATION PRACTICE	0.03	0.00	FY23	2304 Gerken Ave	Vienna, VA 22181	YES	38.90644656	-77.29255897	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
MB0352	S4233	Private	1/11/2022	MANUFACTURED BMP (PROPRIETARY)	2.07	0.00	FY23	2655 Prosperity Ave	Fairfax, VA 22031	YES	38.88030172	-77.22957166	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
MB0353	S4233	Private	1/11/2022	MANUFACTURED BMP (PROPRIETARY)	2.16	0.00	FY23	2665 Prosperity Ave	Fairfax, VA 22031	YES	38.88008985	-77.23168697	PL30	Accotink Creek	VAN-A15R_LOB01A02	No	No
MB0354	S4233	Private	1/11/2022	MANUFACTURED BMP (PROPRIETARY)	0.27	0.00	FY23	2655 Prosperity Ave	Fairfax, VA 22031	YES	38.87974516	-77.22992963	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
UG0826	S4233	Private	1/11/2022	UNDERGROUND DETENTION	2.07	0.00	FY23	2655 Prosperity Ave	Fairfax, VA 22031	YES	38.88008241	-77.22973536	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
UG0827	S4233	Private	1/11/2022	UNDERGROUND DETENTION	2.16	0.00	FY23	2665 Prosperity Ave	Fairfax, VA 22031	YES	38.87995852	-77.23190664	PL30	Accotink Creek	VAN-A15R_LOB01A02	No	No
TR1877	S4234																

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
WP0463	S4240	Private	1/11/2022	WET POND	4.33	0.00	FY23	11325 Random Hills Rd	Fairfax, VA 22030	NO	38.85549319	-77.33717985	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR1056	S4242	Private	2/23/2022	BIORETENTION	0.14	0.07	FY23	3147 Woodland Ln	Alexandria, VA, 22309	YES	38.72330578	-77.08422759	PL28	Little Hunting Creek	VAN-A14E_LIF01A00	Yes	Yes
BR1057	S4242	Private	2/23/2022	BIORETENTION	0.14	0.17	FY23	3147 Woodland Ln	Alexandria, VA, 22309	YES	38.72329371	-77.08394809	PL28	Little Hunting Creek	VAN-A14E_LIF01A00	Yes	Yes
MB0355	S4243	Private	1/11/2022	MANUFACTURED BMP (PROPRIETARY)	0.50	0.00	FY23	5107 Leesburg Pike	Falls Church, VA 22041	YES	38.84478348	-77.11598289	PL25	Four Mile Run	VAN-A12R_ZZZ25A00	No	No
TF0622	S4244	Private	12/1/2021	MANUFACTURED BMP (PROPRIETARY)	0.23	0.00	FY23	6198 Rose Hill Dr	Alexandria, VA 22310	YES	38.78255611	-77.12106737	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
MB0356	S4245	Private	2/23/2022	MANUFACTURED BMP (PROPRIETARY)	2.45	0.00	FY23	14725 Lee Rd	Chantilly, VA 20151	YES	38.87699078	-77.45264501	PL45	Cub Run	VAN-A22R_FLL01A04	Yes	No
MB0357	S4245	Private	7/1/2022	MANUFACTURED BMP (PROPRIETARY)	2.45	0.00	FY23	14725 Lee Rd	Chantilly, VA 20151	YES	38.87631016	-77.45360121	PL45	Cub Run	VAN-A22R_FLL01A04	Yes	No
UG0828	S4245	Private	2/23/2022	UNDERGROUND DETENTION	4.91	0.00	FY23	14725 Lee Rd	Chantilly, VA 20151	YES	38.87711507	-77.45265397	PL45	Cub Run	VAN-A22R_FLL01A04	Yes	No
UG0829	S4245	Private	2/23/2022	UNDERGROUND DETENTION	6.22	0.00	FY23	14725 Lee Rd	Chantilly, VA 20151	YES	38.8764846	-77.45342914	PL45	Cub Run	VAN-A22R_FLL01A04	Yes	No
TR1883	S4246	Private	1/11/2022	INFILTRATION PRACTICE	0.55	0.39	FY23	5505 Oakwood Rd	Alexandria, VA 22310	YES	38.79608956	-77.12923168	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
MB0358	S4247	Private	2/23/2022	MANUFACTURED BMP (PROPRIETARY)	0.71	0.13	FY23	6221 Rolling Rd	Springfield, VA 22152	YES	38.78150905	-77.23390819	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
UG0830	S4247	Private	2/23/2022	UNDERGROUND DETENTION	0.71	0.13	FY23	6221 Rolling Rd	Springfield, VA 22152	YES	38.7814687	-77.23391656	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
MB0359	S4248	Private	2/23/2022	MANUFACTURED BMP (PROPRIETARY)	0.09	0.00	FY23	5113 Leesburg Pike	Falls Church, VA 22041	YES	38.84263316	-77.11774879	PL25	Four Mile Run	VAN-A12R_ZZZ25A00	No	No
TR1909	S4249	Private	2/23/2022	INFILTRATION PRACTICE	0.23	0.00	FY23	8109 Ransell Rd	Falls Church, VA 22042	YES	38.87159383	-77.22494539	PL26	Cameron Run	VAN-A13R_HOR01B00	Yes	No
RT0630	S4252	Private	2/23/2022	ROOFTOP DETENTION	0.40	0.00	FY23	8100 Lee Hwy	Falls Church, VA 22042	YES	38.87583337	-77.22371159	PL26	Cameron Run	VAN-A13R_HOR01B00	Yes	No
TF0623	S4252	Private	2/23/2022	MANUFACTURED BMP (PROPRIETARY)	0.37	0.00	FY23	8100 Lee Hwy	Falls Church, VA 22042	YES	38.87566723	-77.22371895	PL26	Cameron Run	VAN-A13R_HOR01B00	Yes	No
UG0835	S4253	Private	2/23/2022	UNDERGROUND DETENTION	0.90	0.24	FY23	4980 Leesburg Pike	Alexandria, VA 22302	YES	38.84571114	-77.11362556	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	No
UG0836	S4253	Private	2/23/2022	UNDERGROUND DETENTION	0.92	0.09	FY23	3612 S 14th St	Alexandria, VA 22302	YES	38.84505855	-77.1126223	PL25	Four Mile Run	VAN-A12R_ZZZ25A00	No	No
UG0837	S4253	Private	2/23/2022	UNDERGROUND DETENTION	1.19	0.00	FY23	3600 S 14th St	Alexandria, VA 22302	YES	38.84651591	-77.11253777	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	No
UG0838	S4253	Private	2/23/2022	UNDERGROUND DETENTION	1.86	0.00	FY23	3535 S George Mason Dr	Alexandria, VA 22302	YES	38.84688289	-77.11314329	PL25	Four Mile Run	VAN-A12R_FOU01A00	Yes	No
TR1910	S4254	Private	2/23/2022	INFILTRATION PRACTICE	0.02	0.01	FY23	6931 Tyndale St	McLean, VA 22101	YES	38.9193773	-77.18561733	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1911	S4255	Private	2/23/2022	INFILTRATION PRACTICE	0.07	0.00	FY23	1722 Margie Dr	McLean, VA 22101	NO	38.92017738	-77.18857829	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1912	S4256	Private	2/23/2022	INFILTRATION PRACTICE	0.03	0.05	FY23	6927 Girard St	McLean, VA 22101	YES	38.92008029	-77.18517207	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1913	S4257	Private	7/18/2022	INFILTRATION PRACTICE	0.05	0.00	FY23	1627 Golden Ct	McLean, VA 22101	YES	38.92441713	-77.14859218	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR1058	S4258	Private	2/23/2022	BIORETENTION	0.06	0.01	FY23	1702 MACON ST	MCLEAN, VA 22101	NO	38.9226095	-77.17754848	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
BR1059	S4259	Private	2/23/2022	BIORETENTION	0.04	0.06	FY23	1117 Carper St	McLean, VA 22101	YES	38.94618312	-77.18681637	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
BR1060	S4260	Private	2/23/2022	BIORETENTION	0.05	0.00	FY23	1910 Sawyer Pl	McLean, VA 22101	YES	38.91362478	-77.17426814	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR1062	S4263	Private	2/23/2022	BIORETENTION	0.04	0.00	FY23	9515 Percussion Way	Vienna, VA 22182	YES	38.91948692	-77.27484445	PL22	Difficult Run	VAN-A11R_PYI01A08	No	Yes
BR1063	S4264	Private	2/23/2022	BIORETENTION	0.03	0.00	FY23	1916 Leonard Rd	Falls Church, VA 22043	YES	38.91439575	-77.20110802	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1915	S4265	Private	2/23/2022	INFILTRATION PRACTICE	0.03	0.04	FY23	6714 Van Fleet Dr	McLean, VA 22101	YES	38.91839748	-77.17739194	PL24	Pimmit Run	VAN-A12R_PIM02B06	Yes	Yes
TR1916	S4266	Private	2/23/2022	INFILTRATION PRACTICE	0.08	0.00	FY23	2101 Virginia Ave	McLean, VA 22101	YES	38.90604307	-77.15830666	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
BR1064	S4267	Private	7/1/2022	BIORETENTION	0.05	0.00	FY23	1802 Anderson Rd	Falls Church, VA 22043	YES	38.91795172	-77.198689	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	No
TR1917	S4268	Private	2/23/2022	INFILTRATION PRACTICE	0.04	0.00	FY23	2007 Rockingham St	McLean, VA 22101	YES	38.90903148	-77.15331521	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	No
TR1919	S4270	Private	2/23/2022	INFILTRATION PRACTICE	0.06	0.11	FY23	6613 Greenleaf St	Springfield, VA 22150	YES	38.7741533	-77.16505812	PL30	Accotink Creek	VAN-A15R_LOA01A08	Yes	Yes
BR1065	S4271	Private	7/1/2022	BIORETENTION	0.023	0.00	FY23	4647 Spruce Ave	Fairfax, VA, 22030	YES	38.84727229	-77.36072759	PL46	Popes Head Creek	VAN-A23R_ZZZ46A00	No	No
BR1066	S4271	Private	7/15/2022	BIORETENTION	0.03	0.00	FY23	4647 Spruce Ave	Fairfax, VA 22030	YES	38.84713037	-77.36065919	PL46	Popes Head Creek	VAN-A23R_ZZZ46A00	No	No
TR1920	S4272	Private	2/23/2022	INFILTRATION PRACTICE	0.04	0.00	FY23	1321 Oberon Way	McLean, VA 22102	YES	38.93672307	-77.21862846	PL23	Scotts Run	VAN-A11R_ZZZ23A00	No	No
TR1921	S4273	Private	2/23/2022	INFILTRATION PRACTICE	0.07	0.00	FY23	1901 Bargo Ct	McLean, VA 22101	YES	38.91415419	-77.16001148	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
UG0839	S4275	Private	2/23/2022	UNDERGROUND DETENTION	0.07	0.00	FY23	4868 Cherokee Ave	Alexandria, VA 22312	YES	38.81772244	-77.15649578	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
UG0840	S4275	Private	2/23/2022	UNDERGROUND DETENTION	0.04	0.00	FY23	4876 Cherokee Ave	Alexandria, VA 22312	YES	38.817785	-77.15608646	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
UG0841	S4275	Private	2/23/2022	UNDERGROUND DETENTION	0.07	0.00	FY23	4884 Cherokee Ave	Alexandria, VA 22312	YES	38.81766454	-77.1566357	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
UG0842	S4275	Private	2/23/2022	UNDERGROUND DETENTION	0.05	0.00	FY23	4892 Cherokee Ave	Alexandria, VA 22312	YES	38.8175365	-77.15598448	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
UG0843	S4275	Private	2/23/2022	UNDERGROUND DETENTION	0.07	0.00	FY23	4900 Cherokee Ave	Alexandria, VA 22312	YES	38.81745427	-77.156455	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TR1922	S4276	Private	7/15/2022	INFILTRATION PRACTICE	0.10	0.00	FY23	2730 Pioneer Ln	Falls Church, VA, 22043	YES	38.88045415	-77.21789108	PL26	Cameron Run	VAN-A13R_HOR01B00	Yes	No
TR1923	S4277	Private	2/23/2022	INFILTRATION PRACTICE	0.09	0.31	FY23	7815 Wolf Run Shoals Rd	Fairfax Station, VA 22039	YES	38.74347931	-77.34067299	PL47	Wolf Run	VAN-A24R_ZZZ47A00	No	No
TR1924	S4278	Private	2/23/2022	INFILTRATION PRACTICE	0.48	0.52	FY23	1199 Woodlea Mill Ct	McLean, VA 22102	YES	38.94551021	-77.23139681	PL22	Bull Neck Run	VAN-A11R_ROE01A08	No	Yes
UG0845	S4280	Private	2/23/2022	UNDERGROUND DETENTION	0.07	0.00	FY23	1217 Merchant Ln	McLean, VA 22101	YES	38.94150528	-77.14405294	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
UG0846	S4281	Private	7/18/2022	UNDERGROUND DETENTION	0.08	0.00	FY23	6251 N Kensington St	McLean, VA 22101	YES	38.90920776	-77.15233875	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	No
TR1925	S4282	Private	2/23/2022	INFILTRATION PRACTICE	0.06	0.00	FY23	1447 Waggaman Cir	McLean, VA 22101	NO	38.93254566	-77.16546862	PL24	Pimmit Run	VAN-A12R_PIM02A00	Yes	Yes
TR1926	S4283	Private	2/23/2022	INFILTRATION PRACTICE	0.04	0.05	FY23	2008 Oswald Pl	Falls Church, VA 22043	YES	38.91039897	-77.21017451	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
BR1068	S4284	Private	2/23/2022	BIORETENTION	0.01	0.00	FY23	1906 Hillside Dr	Falls Church, VA 22043	YES	38.91401239	-77.19810497	PL24	Pimmit Run	VAN-A12R_ZZZ24A00	No	Yes
TR1927	S4285	Private	2/23/2022	INFILTRATION PRACTICE	0.07	0.00	FY23	2504 Flint Hill Rd	Vienna, VA 22181	YES	38.89443411	-77.28311667	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	No
BR1069	S4286	Private	2/23/2022	BIORETENTION	0.03	0.05	FY23	8104 EAST BOULEVARD DR	Alexandria, VA 22038	YES	38.73670566	-77.04686987	PL28	Belle Haven	VAN-A14E_POT01A08	Yes	No
BR1070	S4287	Private	2/23/2022	BIORETENTION	0.02	0.00	FY23	8002 Fort Hunt Rd	Alexandria, VA 22308	YES	38.73994643	-77.05482823	PL28	Little Hunting Creek	VAN-A14R_ZZZ28A00	No	No
BR1071	S4288	Private	2/23/2022	BIORETENTION	0.34	0.00	FY23	8399 Leesburg Pike	Vienna, VA 22182	YES	38.92310386	-77.23677276	PL22	Difficult Run	VAN-A11R_OCS01A04	Yes	Yes
UG0847	S4288	Private	2/23/2022	UNDERGROUND DETENTION	0.34	0.00	FY23	8371 Leesburg Pike	Vienna, VA 22180	YES	38.92308273	-77.23653508	PL22	Difficult Run	VAN-A11R_OCS01A04	Yes	Yes
BR1072	S4289	Private	2/23/2022	BIORETENTION	0.07	0.01	FY23	5576 James Young Wy	Fairfax, VA 22032	YES	38.79974171	-77.2972251	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
BR1073	S4289	Private	2/23/2022	BIORETENTION	0.80	0.62	FY23	5567 James Young Wy	Fairfax, VA 22032	YES	38.79927986	-77.29607458	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes
DP0757	S4289	Private	2/23/2022	EXTENDED DETENTION DRY POND	1.53	1.03	FY23	behind 5575 James Young Wy	Fairfax, VA 22032	YES	38.79910648	-77.29717847	PL29	Pohick Creek	VAN-A16R_ZZZ29A00	No	Yes

Facility ID	Site ID	Maintained By	Date Installed	BMP Name	Impervious Acres Treated (ac)	Pervious Acres Treated (ac)	Inspection Date/Year	Facility Address	Facility City/State/Zip	PMA	Latitude	Longitude	HUC6	Receiving Water Name	Receiving Water ID	Receiving Water Impaired	Facility Discharges to Fairfax County's MS4?
BR1074	S4290	Private	2/23/2022	BIORETENTION	0.08	0.21	FY23	11717 Lee Hwy	Fairfax, VA 22030	YES	38.84887883	-77.35184764	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
BR1075	S4290	Private	2/23/2022	BIORETENTION	0.11	0.05	FY23	11717 Lee Hwy	Fairfax, VA 22030	YES	38.84881098	-77.35146299	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
UG0848	S4290	Private	7/1/2022	UNDERGROUND DETENTION	0.69	0.12	FY23	11717 Lee Hwy	Fairfax, VA 22030	YES	38.84869428	-77.35185703	PL22	Difficult Run	VAN-A11R_ZZZ22A00	No	Yes
TR1928	S4291	Private	2/23/2022	INFILTRATION PRACTICE	0.09	0.00	FY23	2045 Virginia Ave	McLean, VA 22101	YES	38.90640369	-77.15875995	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1929	S4291	Private	2/23/2022	INFILTRATION PRACTICE	0.10	0.00	FY23	2043 Virginia Ave	McLean, VA 22101	YES	38.90677023	-77.15888488	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
TR1930	S4291	Private	2/23/2022	INFILTRATION PRACTICE	0.11	0.00	FY23	2041 Virginia Ave	McLean, VA 22101	YES	38.9070523	-77.15885514	PL24	Pimmit Run	VAN-A12R_LIO01A10	Yes	Yes
UG0849	S4292	Private	2/23/2022	UNDERGROUND DETENTION	1.00	0.00	FY23	next to 2838 Cambridge Park Pl	Fairfax, VA 22031	NO	38.87765882	-77.25554811	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	Yes
BR1076	S4293	Private	2/23/2022	BIORETENTION	0.47	0.44	FY23	4913 Franconia Rd	Alexandria, VA 22310	YES	38.78677462	-77.11859753	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	No
TR1931	S4294	Private	2/23/2022	INFILTRATION PRACTICE	1.54	0.00	FY23	adjacent to 7193 Greyson Woods Ln	McLean, VA 22101	YES	38.94126791	-77.19218585	PL23	Dead Run	VAN-A11R_DEA01A04	Yes	Yes
TR1932	S4295	Private	2/23/2022	INFILTRATION PRACTICE	0.87	0.37	FY23	6595 Springfield Center Dr	Springfield, VA 22150	NO	38.76463876	-77.17537238	PL30	Accotink Creek	VAN-A15R_LOA01A08	Yes	Yes
UG0850	S4295	Private	2/23/2022	UNDERGROUND DETENTION	5.63	2.16	FY23	6595 Springfield Center Dr	Springfield, VA 22150	NO	38.76572543	-77.17315403	PL30	Accotink Creek	VAN-A15R_ZZZ30A00	No	No
TR1933	S4296	Private	2/23/2022	INFILTRATION PRACTICE	0.12	0.29	FY23	adjacent to 2992 Beechwood Ln	Falls Church, VA 22042	YES	38.87109645	-77.16434776	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
TR1934	S4296	Private	2/23/2022	INFILTRATION PRACTICE	0.33	0.37	FY23	west of 2996 Beechwood Ln	Falls Church, VA 22042	YES	38.87041772	-77.16489672	PL26	Cameron Run	VAN-A13R_ZZZ26A00	No	Yes
MB0361	S4297	Private	2/23/2022	MANUFACTURED BMP (PROPRIETARY)	0.86	0.00	FY23	1735 Business Center Dr	Reston, VA 20190	YES	38.94924147	-77.32899075	PL22	Difficult Run	VAN-A11R_COV02A02	Yes	No
TF0624	S4297	Private	2/23/2022	MANUFACTURED BMP (PROPRIETARY)	0.21	0.00	FY23	1735 Business Center Dr	Reston, VA 20190	YES	38.94961275	-77.32904597	PL22	Difficult Run	VAN-A11R_COV02A02	Yes	No
UG0851	S4297	Private	2/23/2022	UNDERGROUND DETENTION	3.06	0.00	FY23	1735 Business Center Dr	Reston, VA 20190	YES	38.94954374	-77.32885807	PL22	Difficult Run	VAN-A11R_COV02A02	Yes	No
MB0362	S4298	Private	7/1/2022	MANUFACTURED BMP (PROPRIETARY)	0.35	0.00	FY23	5285 Port Royal Rd	Springfield, VA 22161	YES	38.80803985	-77.2175577	PL30	Accotink Creek	VAN-A15L_ACO01A10	Yes	Yes

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R16

Chesapeake Bay TMDL Action Plan  
Implementation Updates

VSMP Permit Number VA0088587  
9-30-2022



Summary Table showing Cumulative Progress Towards Action Plan Pollutant Reductions

Item	Reductions Proposed from Approved Action Plan			Reductions Completed from Approved Action Plan (All Proposed Action Plan Reductions Met or Exceeded)				Reductions Achieved in Addition to Approved Action Plan				Total Reductions Achieved to Date		
	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	Completion Reported	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	Completion Reported	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)
Structural Retrofits for TMDL Compliance	5,731.78	552.73	681,896.28	Action Plan	5,395.89	515.50	651,880.01					7,420.55	710.22	815,039.97
				2017 Annual Report	383.75	38.86	30,496.14	2017 Annual Report	93.95	8.31	5,924.34			
								2018 Annual Report	164.33	15.02	14,429.71			
								FCPS Projects	204.91	18.61	13,510.41			
								2019 Annual Report	199.49	19.86	17,164.22			
								2020 Annual Report	464.49	48.36	39,095.44			
								2021 Annual Report	236.93	16.80	19,412.38			
								2022 Annual Report	276.81	28.90	23,127.32			
				<b>Total</b>	<b>5,779.64</b>	<b>554.36</b>	<b>682,376.15</b>	<b>Total</b>	<b>1,640.91</b>	<b>155.86</b>	<b>132,663.82</b>			
Stream Restoration for TMDL Compliance	18,198.75	5,919.67	1,802,250.84	Action Plan	10,725.21	2,779.45	970,979.98					42,320.16	13,697.38	4,246,145.79
				2017 Annual Report	4,483.83	1,759.38	371,273.81	2017 Annual Report	344.72	129.60	44,621.53			
				2018 Annual Report	3,290.22	1,323.80	423,924.82	2018 Annual Report	3,667.99	590.82	169,126.93			
				2019 Annual Report	62.14	58.77	38,289.73	2019 Annual Report	6,183.98	1,950.09	662,555.52			
								2020 Annual Report	6,907.21	2,423.59	739,653.63			
								2021 Annual Report	2,094.29	1,089.51	277,964.50			
								2022 Annual Report	4,560.57	1,592.37	547,755.34			
				<b>Total</b>	<b>18,561.40</b>	<b>5,921.40</b>	<b>1,804,468.34</b>	<b>Total</b>	<b>23,758.76</b>	<b>7,775.98</b>	<b>2,441,677.45</b>			
All Structural Facilities 2006-2009	5,705.48	670.27	577,628.02	Action Plan	5,705.48	670.27	577,628.02					5,705.48	670.27	577,628.02
Redevelopment	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	2019 Annual Report	83.79	11.35	6,034.03	254.81	34.86	20,213.85
								2020 Annual Report	93.51	13.26	7,717.41			
								2021 Annual Report	51.47	6.64	4,126.09			
								2022 Annual Report	26.04	3.61	2,336.32			
								<b>Total</b>	<b>254.81</b>	<b>34.86</b>	<b>20,213.85</b>			
More Stringent Single Family Residential Standards	135.32	22.09	11,977.54	Action Plan	135.32	22.09	11,977.54	2017 Annual Report	106.35	16.16	8,132.78	1,522.94	143.22	34,869.43
								2018 Annual Report	2.24	0.35	156.00			
								2019 Annual Report	436.90	41.32	788.19			
								2020 Annual Report	298.32	24.03	6,177.25			
								2021 Annual Report	320.30	24.56	7,637.67			
								2022 Annual Report <sup>c</sup>	223.51	14.71	0.00			
								<b>Total</b>	<b>1,387.62</b>	<b>121.13</b>	<b>22,891.89</b>			
In-Lake Forebay Retrofits	6,615.89	391.88	156,038.24	Action Plan	4,289.43	254.50	99,156.00					7,302.02	435.17	174,801.22
				2018 Annual Report	2,326.46	137.38	56,882.24	2022 Annual Report	686.13	43.29	18,762.98			
				<b>Total</b>	<b>6,615.89</b>	<b>391.88</b>	<b>156,038.24</b>	<b>Total</b>	<b>686.13</b>	<b>43.29</b>	<b>18,762.98</b>			
Septic Conversions	1,806.85	0	0.00	Action Plan	1,806.85	0.00	0.00	2017 Annual Report	201.60	0.00	0.00	2,219.38	0.00	0.00
								2018 Annual Report	29.00	0.00	0.00			
								2019 Annual Report	60.48	0.00	0.00			
								2020 Annual Report	50.40	0.00	0.00			
								2021 Annual Report	22.05	0.00	0.00			
								2022 Annual Report	49.00	0.00	0.00			
								<b>Total</b>	<b>412.53</b>	<b>0.00</b>	<b>0.00</b>			
Off-Site Pollutant Reduction Credits	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00	2022 Annual Report - Wastewater Credit Transfer <sup>b</sup>	12,145.00	1,403.00	0.00	12,145.00	1,403.00	0.00

Item	Reductions Proposed from Approved Action Plan			Reductions Completed from Approved Action Plan (All Proposed Action Plan Reductions Met or Exceeded)				Reductions Achieved in Addition to Approved Action Plan				Total Reductions Achieved to Date		
	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	Completion Reported	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	Completion Reported	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)
Nutrient Management Plans <sup>a</sup>	89.58	1.82	0.00	Action Plan	89.58	1.82	0.00					89.58	1.82	0.00
Land Use Change	60.30	3.17	1,746.57	Action Plan	60.30	3.17	1,746.57	2017 Annual Report	13.65	0.48	167.53	203.24	12.38	5,824.90
								2018 Annual Report	10.37	0.79	495.09			
								2019 Annual Report	No land use change reported					
								2020 Annual Report	117.84	7.71	3,236.65			
								2021 Annual Report	1.08	0.23	179.06			
								2022 Annual Report	No land use change reported					
								<b>Total</b>	<b>142.94</b>	<b>9.21</b>	<b>4,078.33</b>			
Additional Means and Measures	0.00	0.00	0.00	Action Plan	0.00	0.00	0.00					0.00	0.00	0.00
<b>Total Means and Methods</b>	<b>38,343.95</b>	<b>7,561.63</b>	<b>3,231,537.49</b>		<b>38,754.46</b>	<b>7,564.99</b>	<b>3,234,234.86</b>		<b>40,428.70</b>	<b>9,543.33</b>	<b>2,640,288.32</b>	<b>79,183.16</b>	<b>17,108.32</b>	<b>5,874,523.18</b>
<b>Total Adjusted Required Reductions and Offsets for Current Permit Cycle (April 1, 2015 - March 31, 2020)</b>												<b>2,700.77</b>	<b>100.69</b>	<b>153,757.97</b>
<b>Reductions Applied to Next Permit Cycle (Pending)</b>												<b>76,482.39</b>	<b>17,007.63</b>	<b>5,720,765.21</b>

<sup>a</sup> NMP credit based on Phase I TMDL Action Plan - Phase II Action Plan will incorporate updates to this evaluation

<sup>b</sup> Annual Water Quality Credit Transfer for Calendar Year 2021 from the Upper Occoquan Service Authority - see attached credit transfer

<sup>c</sup> Structural single family credits for the reporting year are being verified and will be reported in 2023

**Summary of Required Reductions (based on Action Plan Table 1.B) - using MS4 area at time of Phase I TMDL Action Plan, Phase II Action Plan includes updated MS4 area**

Item	TN (lbs/year)	TP (lbs/year)	TSS (lbs/year)
Total Required Reductions and Offsets (from Approved Action Plan)	2,607.69	101.71	152,772.37
+ Required Grandfathered Offsets for Projects Initiating Construction July 1, 2016 - June 30, 2017 (Calculations documented in 2017 annual report)	-20.28	-7.46	-2,666.66
+ Required Grandfathered Offsets for Projects Initiating Construction July 1, 2017 - June 30, 2018 (Calculations documented in 2018 annual report)	29.40	-1.03	-223.12
+ Required Grandfathered Offsets for Projects Initiating Construction July 1, 2018 - June 30, 2019	83.96	7.47	3,875.38
<b>= Total Adjusted Required Reductions and Offsets for Current Permit Cycle</b>	<b>2,700.77</b>	<b>100.69</b>	<b>153,757.97</b>

# Structural Retrofits for TMDL Compliance July 1, 2021 - June 30, 2022

Updated: 9/19/2022

## Structural Retrofits

### Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2021 to June 30, 2022 (or previously unreported)

Project Name	Substantial Completion	Long.	Lat.	Type of Project or BMP	Treated (Ac)	Impervious Treated (Ac)	Pervious Treated (Ac)	Estimated Cost (\$)	Estimated Amount of Total			Pollutant Reduction Calculation Method	% Treated Area Outside Regulated	Baseline Reduction Provided for			Total Credit Received (lb/yr)		
									TN	TP	TSS			TN	TP	TSS	TN	TP	TSS
<b>Construction Complete</b>																			
Leigh Meadow & Towlston	10/29/2021	-77.269100	38.951740	Filtering Practices	19.42	6.73	12.69	\$407,202	77.97	6.07	4,081.63	CBEE Filtering Practices	27%	1.97	0.24	203.45	76.00	5.83	3,878.19
Sully Basins	4/19/2022	-77.457500	38.846900	Constructed Wetland	40.35	15.03	25.32	\$1,333,613	89.70	9.63	7,785.31	CBP Retrofits Expert Panel, ST curve, for 0.3 inches of runoff	0%	0.09	0.01	6.13	89.61	9.62	7,779.18
Sully Basins	4/19/2022	-77.458200	38.847500	Constructed Wetland	59.48	30.70	28.78	\$1,345,572	112.89	13.52	11,473.79	CBP Retrofits Expert Panel, ST curve, for 0.2 inches of runoff	0%	0.05	0.01	4.73	112.84	13.51	11,469.06
Sully Basins	4/19/2022	-77.459400	38.847500	Constructed Wetland	7.49	3.04	4.45	\$546,437	21.69	2.39	1,961.24	CBP Retrofits Expert Panel, ST curve, for 0.4 inches of runoff	3%	0.24	0.04	30.98	21.45	2.35	1,930.26
<b>Subtotal:</b>					<b>126.74</b>	<b>55.50</b>	<b>71.24</b>	<b>\$3,632,824</b>	<b>302.25</b>	<b>31.61</b>	<b>25,301.97</b>			<b>2.35</b>	<b>0.30</b>	<b>245.29</b>	<b>299.90</b>	<b>31.31</b>	<b>25,056.69</b>
													<b>Fairfax Credit</b>	<b>92.3%</b>	<b>276.81</b>	<b>28.90</b>	<b>23,127.32</b>		
													Herndon Credit	4.2%	12.60	1.32	1,052.38		
													Vienna Credit	3.5%	10.50	1.10	876.98		

### Control Measures Expected to be Implemented During the Next Reporting Period (July 1, 2022 - June 30, 2023):

As reported in the 2017 Annual Report, Fairfax County has completed the control measures in the approved TMDL Action Plan which were over and above the 5% reduction requirement. The County will continue to report additional implemented projects annually. Projects currently in construction include: constructed wetlands at Gunston Corner at Laurel Hill, Peyton Run, and Centre Ridge; Hollin Meadows cisterns; Springfield Parking Garage and Sully Community Center manufactured treatment devices; and Mt Vernon Government Center retrofits.

# Stream Restoration July 1, 2021 - June 30, 2022

Updated: 9/19/2022

Stream Restoration

**Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2021 to June 30, 2022 (or previously unreported)**

Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Restored Length (LF)	Estimated Amount of Total Pollutant Reduction (lbs/yr)			Pollutant Reduction Calculation Method	% Treated Area Outside Regulated Area	Baseline Reduction Provided for Unregulated Areas (lb/yr)			Total Credit Received (lb/yr)											
										TN	TP	TSS			TN	TP	TSS	TN	TP	TSS									
<b>Construction Complete</b>																													
Accotink Creek @ Wakefield Park	11/23/2021	-77.2286111	38.815725	Urban Stream Restoration	15,296.00	5,292.00	10,004.0	\$2,396,233	4,878	2,632	258	88,871	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 491 tons/yr, Sediment Delivery Ratio: 0.181	66.8%	1,758.88	172.26	59,389.67	873.1	85.5	29,481.3									
Leigh Meadow & Towlston	10/29/2021	-77.27115	38.95121	Urban Stream Restoration	117.87	41.42	76.5	\$2,034,202	1,687	529	244	83,959	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 463.86 tons/yr, Average Stream Bank Height: 6.2 ft, Sediment Delivery Ratio: 0.181	26.5%	9.69	0.83	623.74	519.1	242.7	83,334.9									
Leigh Meadow & Towlston	10/29/2021	-77.27115	38.95121	Outfall Restoration	9.55	2.73	6.8	\$757,460	187	78	6	3,733	CBP Urban Stream Restoration Expert Panel: Protocol 4 -Proposed treatment volume: 26,764 cf, Sediment Delivery Ratio: 0.181	26.5%	1.87	0.16	120.53	75.8	5.5	3,612.2									
Scotts Run @ Old Meadow Road	2/1/2022	-77.211	38.918806	Urban Stream Restoration	693.40	405.10	288.3	\$3,130,000	3,699	3,019	1,159	399,648	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 2208 tons/yr, Average Stream Bank Height: 6.3 ft, Sediment Delivery Ratio: 0.181	7.9%	21.70	2.22	1,777.60	2,996.8	1,157.0	397,870.4									
Chestnut Burr Court	10/17/2021	-77.34433	38.930976	Outfall Restoration	10.70	4.60	6.1	\$371,461	654	55	25	8,729	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 654 LF, Average Stream Bank Height: 3 ft, Sediment Delivery Ratio: 0.181	31.3%	2.20	0.23	188.36	52.8	25.1	8,540.5									
Murray Lane	4/4/2022	-77.19106	38.843278	Outfall Restoration	182.90	45.73	137.2	\$1,120,981	722	169	78	26,854	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 722 LF, Average Stream Bank Height: 6.76 ft, Sediment Delivery Ratio: 0.181	14.9%	22.21	2.31	1,858.08	146.9	75.6	24,995.9									
Cedar Chase	6/30/2022	-77.346	38.997	Outfall Restoration	10.70	4.60	6.1	\$10,671	712	152	70	24,086	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 712 LF, Average Stream Bank Height: 7 ft, Sediment Delivery Ratio: 0.181	70.5%	10.61	0.86	626.38	141.1	69.0	23,459.8									
Shouse Village	3/11/2022	-77.27026	38.944231	Outfall Restoration	117.93	37.69	80.2	\$1,040,846	1,035	142	65	22,508	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1035 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	8.1%	6.36	0.49	352.21	135.4	64.8	22,156.1									
<b>Subtotal:</b>					<b>16,439.05</b>	<b>5,833.87</b>	<b>10,605.2</b>	<b>\$10,861,854</b>	<b>13,574.00</b>	<b>6,775</b>	<b>1,905</b>	<b>658,388</b>			<b>1,833.52</b>	<b>179.36</b>	<b>64,936.57</b>	<b>4,941.0</b>	<b>1,725.2</b>	<b>593,451.1</b>									
															<b>Fairfax Credit</b>														
															92.3%			<b>4,560.57</b>			<b>1,592.37</b>			<b>547,755.34</b>					
															Herndon Credit			4.2%			207.52			72.46			24,924.94		
															Vienna Credit			3.5%			172.94			60.38			20,770.79		

**Control Measures Expected to be Implemented During the Next Reporting Period (July 1, 2022 - June 30, 2023):**

Fairfax County has completed the control measures in the approved TMDL Action Plan as reported in the 2019 annual report. The County will continue to report additional implemented projects annually. Other stream restoration projects currently in construction include: Gunston Corner at Laurel Hill, Rolling Creek Way, Paul Springs Branch at Hollin Hills, and Accotink Tributary at Danbury Forest.

## In-Lake Forebay Retrofit Calculations

### In-Lake Forebay Retrofits

Projects previously reported in the Chesapeake Bay TMDL Action Plan (2017) and 2018 Annual Report are not highlighted

Projects in Addition to Those Reported in the Chesapeake Bay TMDL Action Plan Completed July 1, 2021 to June 30, 2022 (highlighted in yellow)

	Substantial Completion	Drainage Area (ac)	Impervious Area (ac)	Lake Volume [Vl] (ac-ft)	Forebay area volume [Vf](ac-ft)	In-Lake Volume [Vlf] (ac-ft)	Vol Btwn Normal Pool /Top of Forebay [Vf'] (ac-ft)	% of Treated Area Outside the Regulated Area	Baseline Reduction Provided for Unregulated Areas (lb/yr)			Total Credit Received (lb/yr)			Project Included in 1.B.1 List? (Yes/No)	# on 1.B.1 List
									TN	TP	TSS	TN	TP	TSS		
Barton (Dredging & Forebay)	6/21/2011	571.62	176.51	42.83	3.00	39.35	0.48	34.9%	156.34	15.30	7,374.35	482.69	28.52	13,751.42	No	N/A
Barton (Dredge/Enh F.Bay)	12/29/2021	571.62	176.51	42.83	10.97	30.10	1.76	0.0%	-	-	-	743.37	46.90	20,328.26	No	N/A
Huntsman	9/30/2014	1482.04	421.93	189.77	29.88	108.57	51.32	38.7%	404.00	34.76	26,065.91	3,184.64	187.51	69,809.06	No	N/A
Woodglen	11/18/2015	740.55	218.02	101.30	5.90	92.11	3.30	19.7%	94.58	7.37	5,289.74	979.95	59.69	23,867.21	No	N/A
Royal Lake	7/18/2017	2456.92	750.83	256.16	15.54	226.71	13.91	23.9%	413.17	36.08	19,365.08	2,520.54	148.84	61,627.82	No	N/A
<b>Total:</b>									<b>1,068.09</b>	<b>93.51</b>	<b>58,095.08</b>	<b>7,911.18</b>	<b>471.46</b>	<b>189,383.77</b>		

Barton Dredging	Load Reduction (dredging)		TN (lbs)	TP (lbs)	TSS (lbs)
	Pre-dredge		2678	270	212733
	Post-dredge		2734	277	217684
	Additional Reduction (Δf)		56	7	4951

Efficiency	Runoff Depth	TN (%)	TP (%)	TSS (%)
Pre-dredge	1.64	38.5	60.3	77.0
Post-dredge	2.91	39.3	61.8	78.8

Barton Forebay	Load Reduction (forebay)		TN (lbs)	TP (lbs)	TSS (lbs)
	Lake		2734	277	217684
	Lake and Forebay		3317	314	233858
	Additional Reduction (Δf)		583	37	16175

Efficiency	Runoff Depth	TN (%)	TP (%)	TSS (%)
Lake	2.91	39.3	61.8	78.8
Forebay	0.20	13.8	21.5	27.6
Lake only w/Forebay	2.68	39.3	61.8	78.8
Lake and Forebay	-	47.7	70.0	84.7

Barton Dredging & Enhanced Forebay	Load Reduction (forebay)		TN (lbs)	TP (lbs)	TSS (lbs)
	Lake		2734	277	217684
	Lake and Forebay		4061	361	254187
	Additional Reduction (Δf)		1326	84	36503
	After Prev Claimed Reduction		743.37	46.90	20328.26
	Fairfax Credit	92.3%	686.13	43.29	18,762.98
	Herndon Credit	4.2%	31.22	1.97	853.79
Vienna Credit	3.5%	26.02	1.64	711.49	

Efficiency	Runoff Depth	TN (%)	TP (%)	TSS (%)
Lake	2.91	39.3	61.8	78.8
Forebay	0.75	31.7	49.6	63.4
Lake only w/Forebay	2.05	39.1	61.3	78.2
Lake and Forebay	-	58.4	80.5	92.0

Huntsman	Load Reduction (forebay)		TN (lbs)	TP (lbs)	TSS (lbs)
	Lake		6994	691	536373
	Lake and Forebay		10582	913	632248
	Additional Reduction (Δf)		3589	222	95875

Efficiency	Runoff Depth	TN (%)	TP (%)	TSS (%)
Lake	5.40	39.3	61.8	78.8
Forebay	0.85	33.2	52.0	66.5
Lake only w/Forebay	3.09	39.3	61.8	78.8
Lake and Forebay	-	59.5	81.7	92.9

Woodglen	Load Reduction (forebay)		TN (lbs)	TP (lbs)	TSS (lbs)
	Lake		3514	351	273657
	Lake and Forebay		4588	418	302814
	Additional Reduction (Δf)		1075	67	29157

Efficiency	Runoff Depth	TN (%)	TP (%)	TSS (%)
Lake	5.58	39.3	61.8	78.8
Forebay	0.32	19.8	30.9	39.6
Lake only w/Forebay	5.07	39.3	61.8	78.8
Lake and Forebay	-	51.3	73.6	87.2

Royal Lake	Load Reduction (forebay)		TN (lbs)	TP (lbs)	TSS (lbs)
	Lake		11731	1184	929490
	Lake and Forebay		14665	1369	1010483
	Additional Reduction (Δf)		2934	185	80993

Efficiency	Runoff Depth	TN (%)	TP (%)	TSS (%)
Lake	4.09	39.3	61.8	78.8
Forebay	0.25	16.2	25.3	32.4
Lake only w/Forebay	3.62	39.3	61.8	78.8
Lake and Forebay	-	49.1	71.5	85.7



## Single Family Residential Development &lt; 1 Acre: Nutrient Credit Purchases Identified by County July 1, 2021 - June 30, 2022 (on parcels intersecting 2022 MS4)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS	NITROGEN	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
				CREDITS PURCHASED	CREDITS PURCHASED			
NCA1140	Parkview Hill Lot 48	5599-INF-006-2	0.03	0.24	3.170	4/22/2021	0212 06 0048	6903 Lupine Lane, Mclean, VA 22101
NCA1142	Thompson Crest Lot 2	762-INF-001-1	0.18	0.17	2.660	4/26/2021	0353 25 0002	13128 Thompson Road, Fairfax, VA 22033
NCA1143	Hansborough Lot 85	000804-INFV-034-A	0.31	0.23	3.100	5/13/2021	0301 05 0085	1215 Raymond Avenue, Mclean, VA 22101
NCA1144	Chesterbrook Woods Sec 2 Lot 23	006828-INF-032-1	0.30	0.04	0.630	5/13/2021	0314 05 0023	1623 Woodman Drive, Mclean, VA 22101
NCA1147	Lane on Georgetown Pike Lot 5	7931-INF-004-A-3	0.83	0.05	0.550	5/14/2021	0223 08 0005	1004 Dogue Hill Lane, Mclean, VA 22101
NCA1149	Langley Hill Lot 4	13116-INF-002-2	0.35	0.20	2.480	5/18/2021	0223 02 0004	1001 Turkey Run Road, Mclean, VA 22101
NCA1153	West Grass Ridge Sec 1 Blk 4 Lot 2	25852-INF-005-2	0.32	0.08	0.780	5/17/2021	0304 28040002	6649 Hazel Lane, Mclean, VA 22101
NCA1155	Condon Manor oF Mclean Lot 1	8499-INF-002-3	0.40	0.02	0.260	4/30/2021	0292 14 0001	8100 Lewinsville Road, Mclean, VA 22101
NCA1157	Waples Mill Road Lot A	1502-INF-003-1	0.61	0.13	1.720	5/20/2021	0473 01 0046A	11005 Oakton View Drive, Oakton, VA 2214
NCA1161	West Springfield Sec 4 Lot 34	1928-INF-005-2	0.13	0.10	0.680	5/3/2021	0892 02 0034	6712 Caneel Court, Springfield, VA 22152
NCA1162	El Nido Estates Sec 3 Lot 31	13236-INF-007-2	0.18	0.06	0.940	6/2/2021	0313 11 0031	1802 Birch Road, Mclean, VA 22101
NCA1164	El Nido Parcel K Lot 1 of Parcel A	4829-INF-002-2	0.24	0.05	0.780	5/28/2021	0313 03A 0001	6451 Hitt Avenue, Mclean, VA 22101
NCA1167	Pimmit Hills Lot 182 Sec 6	5134-INF-213-3	0.17	0.07		1/13/2020	0401 03 0182	1926 Cherri Drive, Falls Church, VA 22043
NCA1169	Pimmit Hills Sec 6 Lot 5	5134-INF-255-2	0.24	0.08	1.080	5/28/2021	0392 06 0005	7730 Lisle Avenue, Falls Church, VA 22043
NCA1170	Pimmit Hills Sec 3 Lot 44	15705-INF-002-2	0.20	0.01	0.160	5/28/2021	0401 02 0044	1927 Cherri Drive, Falls Church, VA 22043
NCA1171	Compton Villace Sec 13B	8783-INF-002-3	0.10	0.08	0.550	6/2/2021	0652 15 0022	14149 Coble Laskey Court, Centreville, VA 20121
NCA1176	Collingood Manor Block D Lot 16, Lot 17	1555-INF-007-2	0.24	0.05	0.780	5/18/2021	1024 20D 0017	1120 Chadwick Avenue, Alexandria, VA 22308
NCA1178	Spring Lake Lot 32	9903-INF-013-2	0.31	0.22	2.960	6/9/2021	0283 05 0032	9423 Courthouse Road, Vienna, VA 22181
NCA1179	Oak Hill Estate Sec 3 & Sec 4 Lot 66	9343-INF-001-1	0.15	0.11	1.450	6/9/2021	0223 01 0040C	3480 Rose Crest Lane, Mclean, VA 22101
NCA1181	River Oaks Sec 1 Lot 3	508-INF-023-2	0.23	0.08	1.080	6/15/2021	0214 11 0003	6909 Arbor Lane, Mclean, VA 22101
NCA1185	Sturbridge Lot 16	5514-INF-002-2	0.17	0.08	1.060	4/30/2021	0213 15 0016	1042 Balls Hill Road, Mclean, VA 22101
NCA1186	Franklin Park Blk 3 Lot 4 & Lot 4	009421-INF-004-1	0.37	0.20	3.130	6/11/2021	0411 13030003	1874 Virginia Avenue, Mclean, VA 22101
NCA1187	Beacon Hill Sec 1 Lot 13	3355-INF-010-1	0.12	0.05	0.780	6/16/2021	0404 07 0013	6636 Beacon Lane, Falls Church, VA 22043
NCA1192	Thornrose Sec 1 Blk 1 Lot 13 Lot 14	1707-INF-004-1	0.29	0.17	2.660	3/9/2021	1021 03010014	2905 & 2907 Dunbar Street, Alexandria, VA 22306
NCA1193	Thornrose Sec 1 Blk 1 Lot 15 Lot 16	1707-INF-005-1	0.29	0.13	2.030	3/9/2021	1021 03010016	2901 & 2903 Dunbar Street, Alexandria, VA 22306
NCA1194	Reids Addition to Woodside Estates	25039-INF-006-2	0.91	0.21	2.610	6/21/2021	0291 07 0009	1309 Altamira Court, Mclean, VA 22102
NCA1195	Braddock Hills Lot 37B	9896-INF-005-1	0.17	0.08	1.250	6/17/2021	0714 10 0037B	4808 Columbia Road, Annandale, VA 22003
NCA1196	Wakefield Forest Sec 1 Lot 4	1926-INF-010-2	0.43	0.10	1.560	6/25/2021	0584 11 0004	4012 Old Hickory Road, Fairfax, VA 22032
NCA1197	Countryside Lot 11	4061-INF-003	0.46	0.17	2.290	6/25/2021	0213 17 0011	7009 Holyrood Drive, Mclean, VA 22101
NCA1203	Marie Perzel Property Lot 4	211-INF-002-1	0.44	0.04	0.540	5/6/2021	0371 04 0004	2507 Easie Street, Oakton, VA 22124
NCA1204	Dunn Loring Woods Sec 6 Block A Lot 22	25728-INF-003-2	0.24	0.03	0.470	6/9/2021	0491 09A 0022	8224 Colby Court, Vienna, VA 22180
NCA1210	Broyhill Langley Estates Sec 1 Lot 11	23141-INF-009-1	0.29	0.10	1.350	6/29/2021	0214 13 0011	1108 Dead Run Drive, Mclean, VA 22101
NCA1212	Mackall Home Place Lot 8A	1314-INF-005-2	0.36	0.20	2.640	7/9/2021	0192 12 0008A	1005 White Chimney Court, Great Falls, VA 22066
NCA1213	Salona Village Sec 2 Lot 10	545-INF-011-3	0.53	0.08	1.250	2/26/2021	0302 15 0010	6620 Brawner Street, Mclean, VA 22101
NCA1214	Oak Hill Reserve Sec 2 Lot 42	349-INF-003	0.15	0.13	0.890	7/20/2021	0354 25 0042	12836 Rose Grove Drive, Herndon, VA 20171
NCA1215	Ankerdale Sec 2 Lot 50	6182-INF-011-1	0.76	0.09	0.990	7/20/2021	0284 10 0050	9010 Old Courthouse Road, Vienna, VA 22182
NCA1216	Westhampton Sec 1 Pt 17 Lot 18-1	7321-INF-012	0.21	0.12	0.820	7/23/2021	0404 02 0018	2215 Grayson Place, Falls Church, VA 22043
NCA1218	Oliver Estates Lot 13	2073-INF-006-2	0.49	0.18	1.970	7/27/2021	0131 03 0013	821 Golden Arrow Street, Great Falls, VA 22066
NCA1221	Churchill Sec 1 Blk C Lot 27	2338-INF-021-2	0.23	0.03	0.260	7/20/2021	0404 10C 0027	2213 Glenheather Dr, Falls Church, VA 22043
NCA1229	Oak Ridge Lot 15	12422-INF-005-1	0.35	0.13	0.890	8/3/2021	0393 06 0015	2333 Addison Street, Vienna, VA 22180
NCA1231	Pimmit Hill Lot 6 Blk D Sec 1	5134-INF-262	0.34	0.05	0.780	8/6/2021	0401 06D 0006	7424 Howard Court, Falls Church, VA 22043
NCA1238	Woodside Estate Sec 3 Lot 3 Lot 4	4923-INF-033-2	0.86	0.42	3.120	8/10/2021	0203 03 0003	1249 Daleview Drive, Mclean, VA 22102
NCA1240	Wakefield Chapel Estates Sec 5 Lot 214	7217-INF-002-2	0.21	0.08	1.250	8/18/2021	0701 07 0214	4234 Holborn Avenue, Annandale, VA 22003



## Single Family Residential Development &lt; 1 Acre: Nutrient Credit Purchases (2021-2022)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA1241	Pimmit Hills Sec 6 Lot 437	5134-INF-266	0.23	0.05	0.780	8/23/2021	0401 03 0437	1838 Peabody Drive, Falls Church, VA 22043
NCA1244	Lancaster Estates Lot 7	41-INF-001-1	0.60	0.12	1.900	7/9/2021	0554 14 0007	5093 Hazel Ferguson Drive, Fairfax, VA 22030
NCA1245	Pimmit Hills Sec 7 Lot 280	5134-INF-256-1	0.25	0.04	0.270	6/21/2021	0401 16 0280	1918 Anderson Road, Falls Church, VA 22043
NCA1247	Kenbargan Lot 15	5735-INF-018-3	0.24	0.06	0.940	8/25/2021	0411 24 0015	1913 Kenbar Court, Mclean, VA 22101
NCA1250	Holmes Run Acres Lot 4 Sec 4 Blk 1	002708-INFV-007	0.27	0.03	0.220	8/31/2021	0592 08010004	7908 Homes Run Drive, Falls Church, VA 22042
NCA1251	Valley View Lot 15	9128-INF-004-1	0.13	0.10	0.950	9/3/2021	0813 46 0015	5930 Dorothy Bolton Court, Alexandria, VA 22310
NCA1252	Langley Forest Sec 5 Lot 3	007096-INF-052-1	0.44	0.13	1.430	9/3/2021	0214 14 0003	6829 Wemberly Way, Mclean, VA 22101
NCA1256	Tyler Park Sec 4 Lot 219 A&B	1490-INF-003-2	0.18	0.08	1.250	9/3/2021	0503 09 0210	2937 Irvington Road, Falls Church, VA 22042
NCA1260	Stoney Creek Lot 6	7203-CON-004-1		0.11	0.913	9/2/2021	0871 16 0006	10712 Ox Croft Ct, Fairfax Station, VA 22039
NCA1264	Waynewood Sec 6 Blk 18 Lot 12	26011-INF-003-1	0.26	0.07	1.100	9/17/2021	1024 05180012	1201 Priscilla Lane, Alexandria, VA 22308
NCA1266	Spring Lake Estates Lot 14A2	2970-INF-001-2	0.81	0.34	3.730	9/20/2021	0251 04 0014A2	2705 A Floris Lane, Herndon, VA 20171
NCA1272	Langhorne Acres Sec 2 Lot 11	8314-INF-001-1	0.44	0.09	1.420	8/23/2021	0582 08 0011	3601 Kirkwood Drive, Fairfax, VA 22031
NCA1277	George C Hawkins Lot B2	4901-INF-006-2	0.55	0.30	3.290	9/27/2021	0204 01 0057B	8000 Old Falls Road, Mclean, VA 22102
NCA1281	Reston Blk 1 Sec 12 Lot 6	350-INF-002-1	0.27	0.05	0.550		0264 07010006	2360 Tumbletree Way, Reston, VA 20191
NCA1287	Mclean Manor Sec 4 Lot 93	4285-INF-043-2	0.25	0.02	0.310	10/1/2021	0304 17 0093	1603 Wrightson Drive, Mclean, VA 22101
NCA1290	Belle Haven Mews Lot 12	4047-INF-004-2	0.17	0.16	2.500	10/6/2021	0931 39 0012	2017 Swan Terrace, Alexandria, VA 22307
NCA1294	Barcroft Woods Sec 5 Lot 102	13448-INF-001-1	0.24	0.15	1.650	10/1/2021	0604 20 0102	6543 Oakwood Drive, Falls Church, VA 22041
NCA1295	James Hoopers 1st Addn to Chesterbrk Wds Lot 1	15329-INF-001	0.33	0.06	0.950	10/15/2021	0312 10 0001	1446 Woodacre Drive, Mclean, VA 22101
NCA1298	Gum Springs Lot 93	5349-INF-008-1	0.18	0.12	1.880	10/14/2021	1021 01 0093	7739 Fordson Road, Alexandria, VA 22306
NCA1301	Leonard Lot 27	9219-INF-009-1	0.23	0.05	0.780	10/15/2021	0401 18 0027	2020 Kilgore Road, Falls Church, VA 22043
NCA1302	Birgundy Farm Sec 6 Blk A Lot 33	7940-INF-001-2	0.39	0.10	1.560	10/15/2021	0822 05A 0033	3714 Towanda Road, Alexandria, VA 22303
NCA1306	Pine View Estates Lot 6	5138-INF-001	0.11	0.04	0.630	10/26/2021	0823 38 0006	4400 Eaton Place, Alexandria, VA 22310
NCA1307	Colonial Acres Sec 1 Lot 5	1113-INF-004	0.44	0.12	1.880	10/26/2021	1102 02 0005	3801 Colonial Avenue, Alexandria, VA 22309
NCA1309	Poplar Heights Sec 3 Lot 27	2479-INF-008-4	0.23	0.06	0.940	10/28/2021	0501 02 0027	7313 Allan Avenue, Falls Church, VA 22046
NCA1311	Odrick Corner	7351-INF-006-4	0.47	0.16	1.980	11/5/2021	0291 01 0040C	1346 Gordon Lane, Mclean, VA 22102
NCA1312	Great Falls West Lot 63	7373-INF-008-1	0.41	0.35	3.840	11/5/2021	0062 14 0063	625 Nalls Farm Way Drive, Great Falls, VA 22066
NCA1314	Sugar Creek 1st Addition Sec 2 Lot 30	2596-INF-002-1	0.21	0.19	1.810	11/10/2021	0063 11 0030	1160 Taji Court Herndon, VA 20170
NCA1320	Churchill Sec 1 Blk H Lot 7	001279-INF-063-3	0.26	0.05	0.670	11/19/2021	0413 02H 0007	2233 Beacon Hill, Alexandria, VA 22306
NCA1323	Old Mill Estates Sec 2 Lot 30	8424-INF-003-3	0.21	0.16	1.750	11/24/2021	0124 04 0030	1093 Pensive Lane, Great Falls, VA 22066
NCA1324	Eastgate at Mt Vernon Sec 1 Blk 8 Lot 5	6637-INF-001-1	0.13	0.09	1.220	11/30/2021	1101 18080005	4403 Phyllis Street, Alexandria, VA 22312
NCA1325	Town and Country Estates Sec 2 Lot 26	8872-INF-012-4	0.21	0.07	1.100	11/16/2021	0482 10 0026	9020 Dellwood Drive, Vienna, VA 22180
NCA1328	Hollindale Lot 15A	8351-INF-008	0.11	0.14	2.190	11/5/2020	0933 03 0015A2	1907 Whiteoaks Drive, Alexandria, VA 22306
NCA1331	Langley Forest Sec 3 Lot 30	7096-INF-054-1	0.25	0.06	0.660	12/15/2021	0214 03 0030	7001 Benjamin Street, Mclean, VA 22101
NCA1340	Mclean Manor Sec 4 Lot 100	4285-INF-046	0.25	0.05	0.680	12/27/2021	0304 17 0100	1532 Wrightson Drive, Mclean, VA 22101
NCA1341	Estates at Fairfax Lot 34	1866-INF-001-1	0.12	0.09	1.408	6/21/2021	0554 18 0034	12877 Knight Arch Road, Fairfax, VA 22030
NCA1343	Donovan's Nine Sec 1 Lot 9	3033-INF-004	0.37	0.34	5.320	1/24/2022	0871 06 0009	6814 Jermiah Court, Fairfax Station, VA 22039
NCA1344	Devon Park Sec 1 Lot 39	13041-INF-028	0.22	0.07	0.950	1/26/2022	0402 26 0039	2003 McFall Street, Mclean, VA 22101
NCA1347	Garfield Park Sec 1A Lot 157	9649-INFV-043	0.29	0.13	1.904	12/24/2021	0204 29 0157	7834 Montvale Way, Mclean, VA 22102
NCA1348	Old Dominion Gardens Sec 3 Lot 29	1771-INF-020-1	0.31	0.08	0.880	1/6/2022	0213 03 0029	7017 Capitol View Drive, Mclean, VA 22101
NCA1353	Fuilford Sec 1 Lot 33	3683-INF-010-2	0.33	0.16	2.170	1/9/2022	0814 05 0033	6201 Park Terrace, Alexandria, VA 22310
NCA1354	Edgelea Woods Lot 94	007758-INF-001-3	0.11	0.06	0.820	1/13/2022	0481 07 0094	9814 Brightlea Drive, Vienna, VA 22181
NCA1355	Chain Bridge Lot 1	5406-INF-007-1	0.53	0.04	0.540	1/14/2022	0314 01 0043	1502 Forest Lane, Mclean, VA 22101
NCA1360	Langley Forest Sec 5 Lot 6	7096-INF-053	0.50	0.06	0.810	12/3/2021	0214 14 0006	6861 Wemberly Way, Mclean, VA 22101
NCA1363	Reston Sec 1 Lot 30	13343-INF-001-4	0.09	0.06	0.660	1/31/2022	0172 12 0030	11307 South Shore Road, Reston, VA 20190

Single Family Residential Development < 1 Acre: Nutrient Credit Purchases (2021-2022)

NCA_ID	PLAN NAME	PLAN NUMBER	DISTURBED ACRES	PHOSPHORUS CREDITS PURCHASED	NITROGEN CREDITS PURCHASED	EFFECTIVE_DATE	PARCEL_PIN	ADDRESS
NCA1364	Kings Manor Blk G Lot 17 and 18	4821-INF-015	0.16	0.10	1.340	11/11/2021	0302 22G 0017	1158 Randolph Road, Mclean, VA 22101
NCA1368	Potomac Hills Sec 1 Lot 19	25914-INF-004-2	0.33	0.04	0.350	2/10/2022	0313 12 0019	6159 Hardy Drive, Mclean, VA 22101
NCA1369	Clearview Manor Lot 9A	7260-INF-004-1	0.23	0.18	2.450	2/11/2022	0311 06 0009A	6125 Ramshorn Drive, Mclean, VA 22101
NCA1372	Chetaum Kyoko O'Connor TR PCL 40B	5216-INF-002	0.44	0.09	0.990	2/15/2022	0202 01 0040B	891 Georgetown Ridge Court, Mclean, VA 22102
NCA1376	Plymouth Haven Lot 5	5219-INF-007-1	0.31	0.21	3.284	2/22/2022	1112 03 0005	8633 Fort Hunt Road, Fort Hun, VA 22308
NCA1377	Springhaven Estates Lot 29	8701-INFV-011-B	0.89	0.77	8.450	2/17/2022	0203 08 0029	8438 Sparger Street, Mclean, VA 22102
NCA1378	Kiels Gardens Lot 22	9088-INF-008	0.47	0.04	0.540	2/23/2022	0564 02 0022	11527 Leehigh Drive, Fairfax, VA 22030
NCA1379	Downscrest Sec 1 Lot 8	1327-INF-005-3	0.63	0.10	1.100	2/14/2022	0224 02 0008	1109 Basil Road, Mclean, VA 22101
NCA1382	Beverly Manor Lot 18A	12784-INF-009	0.54	0.16	2.160	2/11/2022	0302 04A 0018A	6834 Melrose Drive, Mclean, VA 22101
NCA1384	Summerwood Sec 2 Lot 1A	2706-INF-046-1	0.20	0.12	41.850	12/8/2020	0291 09 0001A	1312 Daviswood Drive, Mclean, VA 22102
NCA1386	Southridge Sec 3 Lot 63	25799-INF-008-1	0.23	0.08	1.090	3/9/2022	0304 31 0063	6935 Espey Lane, Mclean, VA 22101
NCA1387	Town and Country Estates Sec 2 Lot 2	8872-INF-015-1	0.26	0.03	0.470	2/23/2022	0482 10 0002	9224 Dellwood Drive, Vienna, VA 22180
NCA1388	Broyhill Glen Gary Park Sec 2 Lot 19	25769-INF-008-3	0.29	0.10	1.564	2/10/2022	0304 34 0019	6529 Divine Street, Mclean, VA 22101
NCA1390	Franklin Forest Lot 23	7152-INF-010-1	0.29	0.12	0.320	3/10/2022	0411 08 0023	1914 Frankline Avenue, Mclean, VA 22101
NCA1393	Doveville Sec 1 Lot 22	1609-INF-005-2	0.46	0.05	0.680	3/16/2022	0584 05 0022	9100 Joyce Street, Fairfax, VA 22032
NCA1394	John Urban Donahue Part Lot 2	4570-INF-001-3	0.28	0.12	1.050	2/10/2022	0403 14 0002	7135 Ellison Street, Falls Church, VA 22046
NCA1402	Marian Woods Lot 4A	7253-INF-003	0.20	0.09	1.220	4/5/2022	0451 12 0004A	13587 Smallwood Lane, Chantilly, VA 20151
NCA1403	Kent Gardens Sec 1 Lot 10	2013-INF-017	0.23	0.09		2/4/2022	0402 09 0010	1837 Poole Lane, Mclean, VA 22101
NCA1404	Potomac Hills Sec 4 Lot 136	6925-INF-010	0.33	0.05	0.680	4/6/2022	0313 12 0136	6226 Kellogg Drive, Mclean, VA 22101
NCA1405	James Hoopers 2nd Addn to Chesterbrk Wds Lot 44	6828-INF-034-1	0.37	0.08	1.270	4/5/2022	0312 10 0044	1431 Highwood Drive, Mclean, VA 22101
NCA1406	Westchester Sec 2 Lot 12	3259-INF-007-1	0.49	0.07	1.110	3/14/2022	0584 10 0012	9207 Kilmarnock Drive, Fairfax, VA 22031
NCA1409	Marian Woods Lot 1A	7253-INF-002	0.20	0.09	1.409	4/13/2022	0451 12 0001A	13581 Smallwood Lane, Chantilly, VA 20151
NCA1410	Oakton Glade Lot 7	3553-INF-001-1	0.10	0.10		4/11/2022	0472 26 0007	2816 Glde Vale Way, Vienna, VA 22181
NCA1411	Westmoreland Park Sec 2 Lot 57	2043-INF-024	0.21	0.07	0.610	4/6/2022	0404 06 0057	2221 Tulip Drive, Falls Church, VA 22046
NCA1413	Addition Plymouth Haven Sec 2 Blk 4 Lot 7	5291-INF-032-2	0.36	0.11	0.910	3/18/2022	1112 04040007	8709 Standish Road, Alexandria, VA 22308
NCA1417	Rosemont Sec 3 Lot 14	1298-INF-024-3	0.26	0.05	0.790	2/11/2022	0304 29 0014	1609 Woodmoor Lane, Mclean, VA 22101
NCA1418	Broyhill Glen Gary Park Sec 2 Lot 3	25769-INF-007-1	0.23	0.06	0.950	2/11/2022	0304 34 0003	1623 Dempsey street, Mclean, VA 22101
NCA1421	Marian Woods Lot 3A	7253-INF-001	0.28	0.10	1.580	4/25/2022	0451 12 0003A	13585 Smallwood Lane, Chantilly, VA 20151
NCA1422	Broyhill Langley Est Sec 1 Lot 60	8622-INF-56-1	0.24	0.05	0.550	4/28/2022	0213 09 0060	1107 Carper Street, Mclean, VA 22101
NCA1423	Wakefield Forest Sec 2 Lot 105	7611-INF-022-1	0.47	0.07	1.110	4/4/2022	0593 10 0105	8601 Forest Street, Annandale, VA 22003
NCA1425	Garfield Park Sec 4 Lot 147A	9649-INF-046	0.20	0.15	1.650	5/5/2022	0204 29 0147A	1005 Founders Ridge Lane, Mclean, VA 22102
NCA1428	Hollin Hills Sec 15A Blk 2 Lot 10	7985-INF-003	0.17	0.08	1.270	5/10/2022	1021 19020010	2405 Nordok Place, Alexandria, VA 22306
NCA1433	Lewinsville Lot 19A	974-INF-002-1	0.53	0.19	2.080	5/13/2022	0292 01 0019A	7742 Lewinsville Road, Mclean, VA 22102
NCA1435	Oliver Estates Lot 41	2073-INF-008	0.49	0.18	2.424	5/19/2022	0131 03 0041	828 Constellation Drive, Great Falls, VA 22066
NCA1442	Annandale Falls Church Road	261-INF-002-3	0.55	0.41	5.570	5/26/2022	0502 01 0028	6704 Scipio Lane, Falls Church, VA 22042
NCA1444	Dunn Loring Woods Sec 2 Blk P Lot 9	25979-INF-003-1	0.26	0.02	0.320	6/8/2022	0491 09P 0009	8508 Marquette Street, Vienna, VA 22180
NCA1446	Odricks Corner Full	7351-INF-007-2	0.33	0.12	1.320	6/6/2022	0291 01 0039	1347 Gordon Lane, Mclean, VA 22102
NCA1450	Chesterbrook Woods Sec 1 Lot 309	3948-INF-008	0.13	0.01	0.540	6/14/2022	0314 04 0309E	5914 Woodley Road, Mclean, VA 22101
NCA1452	The Ridings at Virginia Run Lot 4	442-INF-046	0.22	0.13	1.770	6/15/2022	0531 06 0048	5880 Iron Stone Court, Centreville, VA 20120
NCA1453	Wakefield Forest Sec 1 Pt Lot 68	7611-INF-024-1	0.41	0.04	0.630	6/8/2022	0593 10 0068	8604 Forest Street, Annandale, VA 22003
NCA1454	Westwood Park Sec 2 Lot 78	14807-INF-001	0.28	0.11	1.490	6/29/2022	0501 13 0078	7434 Westwood Park Lane, Falls Church, VA 22046
NCA1455	Broyhill Glen Gary Park Sec 1 Lot 71	6665-INF-004	0.21	0.04	0.540	6/27/2022	0313 15 0071	6447 Dryden Driver, Mclean, VA 22101
NCA1456	Mclean Hamlet Sec 2 Lot 347	9937-INF-014	0.25	0.04	0.440	6/27/2022	0292 03 0347	8011 Falstaff Road, Mclean, VA 22102
<b>Total Credits Purchased*</b>				<b>14.71</b>	<b>223.51</b>	<i>*Structural single family credits for the reporting year are being verified and will be reported in 2023</i>		

**Septic Conversions from July 1, 2021 to June 30, 2022 (or previously unreported)**

List includes parcels that intersect the FY22 MS4 Service Area

<b>PIN</b>	<b>Street Name</b>	<b>Street Type</b>	<b>Address Number</b>	<b>Type (Residential or Commercial)</b>
0814 50 0005	BROOKVIEW	DR	6008	R
0493 08 0014	OVERBROOK	RD	8504	R
0784 04 0012	SILAS BURKE	ST	6332	R
0881 01 0018	LEE CHAPEL	RD	6408	R
0214 03 0009	BENJAMIN	ST	7012	R

**Reduction from Residential Septic Conversions:**

TN Edge of Stream Loading (lbs/year/person):	3.5	updated per GM20-2003
Average number of people per household for Fairfax County (2010 Census):	2.8	
Number of residential conversions:	5	

**Residential TN reduction (lbs/year) = 49.00**



Redevelopment and Oversized Facility Credit (all pollutant loads in lb/yr)
Projects identified in the July 1, 2021 to June 30, 2022 reporting period (on parcels intersecting 2022 MS4)
Calculation process based on Appendix V.E of Guidance Memo 20-2003

Data collected from VRRM spreadsheets on plans

Table with columns: Plan Number, Plan TP Reduction Required, Plan TP Total Reduction Required, Plan TP Total Reduction Achieved, Plan TN Total Reduction Achieved, BMP Clearinghouse Facility Name, Untreated Phosphorus Load to Practice (Impervious), Untreated Phosphorus Load to Practice (Turf), Facility Impervious Drainage Area (acres), Facility Turf Drainage Area (acres), Facility Drainage Area (acres), Phosphorus Load to Practice, Plan Oversized Facility TP Credit, Total TP Credit, Redevelopment Percentage of Required Reductions, TP Percentage Oversized, Plan Oversized Facility TN Credit, Plan Redevelopment TN Credit, Total TN Credit, Adjusted Facility Treated Depth, TSS Removal Efficiency, Facility TSS Reduction, Plan Oversized Facility TSS Credit, Plan Redevelopment TSS Credit, Total TSS Credit.

TP Reduction Achieved - TP Reduction Required
Oversized + Redevelopment Credit
Redevelopment TP Required/ Total Required TP Reduction
Oversized Facility TP Credit/TP Credit Achieved
Reduction Achieved x Oversized Percentage
Reduction achieved - oversized reduction) x redevelopment percentage
Phosphorus Load to Practice \* 469.2 \* TSS Removal Efficiency

## DEQ Credit Exchange Notification

Pursuant to Part I.J.2.f. of the General VPDES Watershed Permit for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9 VAC 25-820-70), the below named Permittees hereby certify that credits have been transferred between their two facilities as outlined below in full or partial satisfaction of compliance obligations:

**Facility generating credits:** Upper Occoquan Service Authority (UOSA), Permit #: VAN010019

**Jurisdiction acquiring credits:** Fairfax County, MS4 Permit # VA0088587

### Credits Transferred

**Compliance Year:** 2021

**Delivered Total Nitrogen Credits:** 12,145 lbs/yr

**Delivered Total Phosphorus Credits:** 1,403 lb/yr

I certify under penalty of law that this notification and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Facility generating credits:	Jurisdiction acquiring credits: Fairfax Co.
Robert W. Angelotti	Martin K. Hurd
Typed or Printed Name	Typed or Printed Name
	
Signature	Signature
703-830-2200	571-635-6189
Phone Number	Phone Number
February 25, 2022	3 March 2022
Date	Date

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R17

TMDL Action Plan Implementation Updates Other Than  
Chesapeake Bay

VSMP Permit Number VA0088587  
Revised 3-14-2023



## Appendix R17 - Local TMDL Action Plan Implementation FY2022

### Benthic TMDL Action Plan

The Benthic TMDL Action Plan includes Stream Restoration Projects and Stormwater Retrofit Projects. The County has implemented all projects proposed in the Action Plan.

The County continues to implement projects within the affected watersheds in addition to those listed in the Benthic TMDL Action Plan. These are also listed in the updated TMDL Action Plan tables.

The status of other implementation items from the Benthic TMDL Action Plan are summarized below:

Implementation Item		
MS4 Program Plan	The County will continue to implement the MS4 Program Plan, including elements related to sediment, in accordance with the schedule provided for in the MS4 Program Plan.	The County continues to implement its MS4 Program Plan.
Chesapeake Bay TMDL Action Plan	The County will continue to leverage the projects selected to meet the Chesapeake Bay TMDL Action Plan to reduce sediment in the benthic TMDL watersheds. The County's project selection SOP includes a prioritization criteria for local TMDLs.	The County continues to implement the Chesapeake Bay TMDL Action Plan.
County Owned or Operated Property	The County will consider retrofits to County owned or operated property during the development of its annual list of potential projects. Projects may be drawn from the watershed management plans, assessment of County owned or operated property, or other sources as appropriate.	<p>The project identification and assessment process occurs annually in accordance with the County's Stormwater Planning Project Selection SOP.</p> <p>Projects on County property currently in construction:</p> <ul style="list-style-type: none"> <li>• Manufactured Treatment Devices at the Sully Community Center in the Cub Run watershed</li> </ul>
Watershed-Specific Project Implementation	The County will implement at least one project in each of the TMDL watersheds from the summary of potential projects contained in Appendix P2 of the County's 2016 MS4 Program Plan and Annual Report.	<p>Bull Run: The County has completed the Flatlick Phase I project from Appendix P2.</p> <p>Difficult Run: The County has completed the Penderbrook constructed wetland project from Appendix P2.</p> <p>Popes Head Creek: The County has completed the Innisvale</p>

Implementation Item		
		Drive outfall restoration project. This project was identified after creation of the potential project list.
Enhanced Education, Outreach, and Training	The County will continue to implement enhanced education, outreach, and training for sediment in accordance with the MS4 permit and the MS4 Program Plan.	The County is implementing its enhanced education, outreach and training for sediment in accordance with the MS4 Program Plan.

## Bacteria TMDL Action Plan

The status of implementation items from the Bacteria TMDL Action Plan are summarized below:

Implementation Item		
Dog Park Site Assessment	Conduct a walk-through of the dog parks at Baron Cameron and Mason District parks to assess the effectiveness of implemented pet waste management strategies.	The dog parks were assessed in May and June 2022. The Blake Lane Dog Park was also assessed. The dog parks had few isolated pet waste deposits, indicating that most pet owners were cleaning up after their pet. The parks were well-signed with respect to pet waste disposal.
Educational inserts in dog license renewal mailers	Include educational inserts about proper disposal of pet waste in dog license renewal mailers.	The insert has been prepared and is sent annually with the dog license renewals in November.

## PCB TMDL Action Plan

The status of implementation items from the PCB TMDL Action Plan are summarized below:

Implementation Item		
IHRR facility identification modification	The process of identifying IHRR facilities for inspection will be modified in PY3 to include SIC codes from Virginia DEQ's 2016 document titled "The Relationship between Polychlorinated Biphenyls (PCBs), VPDES Wastewater/Stormwater Facilities, Stormwater Industrial General Permitted Facilities (ISWGP's), and the Standard Industrial Classification System (SIC)".	The County updates its IHRR list as new data becomes available, which includes consideration of facilities in the county MS4 associated with these SIC codes in accordance with its modified standard operating procedures. The County is working with regional partners to create and distribute educational materials encouraging proper disposal of materials that may contain PCBs.
Enhanced training on recognition and reporting of illicit discharges by field personnel	Existing training material will be revised in PY3 to include information relevant to PCB discharges. The training will be implemented in PY4 as part of the ongoing biennial training program.	The on-line Employee University training material was revised to include information related to PCB discharges. The training materials were provided in the 2018 annual report.
Enhanced training on good housekeeping and pollution prevention practices	Training materials will be revised in PY3 to include information relevant to potential PCB sources and steps to take if a source of PCBs is discovered at a county property. The training will be implemented in PY4 as part of the ongoing biennial training program.	The on-line Employee University training material was revised to include information related to PCB discharges. The training materials were provided in the 2018 annual report.

## Fairfax County Sediment TMDL Tracking Ledger

Bull Run Stream Restoration	TSS lbs/year	
Constructed	2,598,218.67	
<i>Bull Run</i>		
<i>Cub Run</i>	2,422,839.72	
<i>Johnny Moore Creek</i>		
<i>Little Rocky Run</i>		
<i>Popes Head Creek</i>	175,378.95	
Under Construction	-	
<i>Bull Run</i>		
<i>Cub Run</i>	-	
<i>Johnny Moore Creek</i>		
<i>Little Rocky Run</i>		
<i>Popes Head Creek</i>		
Total	2,598,218.67	Credit Sharing
Fairfax	2,598,218.67	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Bull Run Structural Retrofits	TSS lbs/year	
Constructed	258,452.32	
<i>Bull Run</i>	18,484.11	
<i>Cub Run</i>	185,302.78	
<i>Johnny Moore Creek</i>		
<i>Little Rocky Run</i>	11,629.62	
<i>Popes Head Creek</i>	43,035.81	
Under Construction	-	
<i>Bull Run</i>	-	
<i>Cub Run</i>	-	
<i>Johnny Moore Creek</i>		
<i>Little Rocky Run</i>		
<i>Popes Head Creek</i>	-	
Total	258,452.32	Credit Sharing
Fairfax	258,452.32	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Bull Run Land Use Change	TSS lbs/year	
Constructed	1,158.78	
<i>Bull Run</i>		
<i>Cub Run</i>	1,158.78	
<i>Johnny Moore Creek</i>		
<i>Little Rocky Run</i>		
<i>Popes Head Creek</i>		
Under Construction	-	
<i>Bull Run</i>		
<i>Cub Run</i>		
<i>Johnny Moore Creek</i>		
<i>Little Rocky Run</i>		
<i>Popes Head Creek</i>		
Total	1,158.78	
Fairfax	1,158.78	
Herndon	-	
Vienna	-	

Bull Run Total	TSS lbs/year	
Constructed	2,857,829.77	
<i>Bull Run</i>	18,484.11	
<i>Cub Run</i>	2,609,301.28	
<i>Johnny Moore Creek</i>	-	
<i>Little Rocky Run</i>	11,629.62	
<i>Popes Head Creek</i>	218,414.76	
Under Construction	-	
<i>Bull Run</i>	-	
<i>Cub Run</i>	-	
<i>Johnny Moore Creek</i>	-	
<i>Little Rocky Run</i>	-	
<i>Popes Head Creek</i>	-	
Total	2,857,829.77	Credit Sharing
Fairfax	2,857,829.77	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

No Credit Sharing

Difficult Run Stream Restoration	TSS lbs/year	
Constructed	7,408,631.71	
Under Construction	-	
Total	7,408,631.71	Credit Sharing
Fairfax	6,326,971.48	85.4%
Herndon	-	0.0%
Vienna	1,081,660.23	14.6%

Difficult Run Structural Retrofits	TSS lbs/year	
Constructed	168,077.89	
Under Construction	-	
Total	168,077.89	Credit Sharing
Fairfax	143,538.52	85.4%
Herndon	-	0.0%
Vienna	24,539.37	14.6%

Difficult Run Land Use Change	TSS lbs/year	
Constructed	179.06	
Under Construction	-	
Total	179.06	
Fairfax	179.06	
Herndon	-	
Vienna	-	

No Credit Sharing

Difficult Run Total	TSS lbs/year	
Constructed	7,576,709.60	
Under Construction	-	
Total	7,576,888.66	Credit Sharing
Fairfax	6,470,689.06	85.4%
Herndon	-	0.0%
Vienna	1,106,199.60	14.6%

Popes Head Creek Stream Restoration	TSS lbs/year	
Constructed	175,378.95	
Under Construction	0	
Total	175,378.95	Credit Sharing
Fairfax	175,378.95	100.0%
Herndon	0.00	0.0%
Vienna	0.00	0.0%

Popes Head Creek Structural Retrofits	TSS lbs/year	
Constructed	43,035.81	
Under Construction	-	
Total	43,035.81	Credit Sharing
Fairfax	43,035.81	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

Popes Head Creek Total	TSS lbs/year	
Constructed	218,414.76	
Under Construction	-	
Total	218,414.76	Credit Sharing
Fairfax	218,414.76	100.0%
Herndon	-	0.0%
Vienna	-	0.0%

**NOTES**

Popes Head Creek projects are included in both the Bull Run TMDL and Popes Head Creek TMDL since the TMDLs overlap.

Stream Restoration

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Restored Length (LF)	Estimated Amount of TSS Reduction (lbs/yr)		Pollutant Reduction Calculation Method	Watershed
												With Sediment Delivery Ratio	Without Sediment Delivery Ratio*		
<b>Benthic Action Plan Project Completion Status - Stream Restoration</b>															
CU9206	2	Big Rocky Tributary	5/26/2010	-77.441575	38.849032	Urban Stream Restoration	99.95	29.21	70.74	\$191,600	336	7,307.04	40,370.40	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 336 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 6.4 ft	Cub Run
CU9211A	4	Flatlick Confluence Stream Restoration	5/18/2011	-77.477458	38.862985	Urban Stream Restoration	5,016.42	1,938.97	3,077.45	\$633,530	1400	62,832.00	347,138.12	CBP Urban Stream Restoration Interim Approved Removal Rates; Sediment Delivery Ratio:0.181	Cub Run
CU9218A	5	Schneider Branch Stream Restoration	5/31/2011	-77.467084	38.893042	Urban Stream Restoration	1,022.20	627.48	394.72	\$631,100	1000	9,037.15	49,929.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1000 LF, Average Stream Bank Height: 1.87 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 10 ft	Cub Run
DF9143C46	8	Government Center Stormwater Retrofit	6/29/2012	-77.353374	38.854106	Urban Stream Restoration	148.14	74.73	73.41	\$275,000	1000	22,713.69	125,490.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1000 LF, Average Stream Bank Height: 4.7 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0015	14	Wolftrap Creek	10/19/2013	-77.250652	38.902473	Urban Stream Restoration	755.57	350.97	404.60	\$1,749,434	2089	31,296.08	172,906.52	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2089 LF, Average Stream Bank Height: 3.1 ft, Sediment Delivery Ratio: 0.181	Difficult Run
CU9207	20	Big Rocky Run Phase II	6/25/2014	-77.438891	38.848568	Urban Stream Restoration	4,400.40	1,809.78	2,590.63	\$2,457,798	2550	73,191.24	404,371.49	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2330 LF, Average Stream Bank Height: 6.5 ft, Sediment Delivery Ratio: 0.181	Cub Run
DF83-0002	22	Miller Heights Outfall	8/7/2014	-77.325369	38.888489	Outfall Restoration	23.83	5.34	18.49	\$209,803	233	11,728.80	64,800.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 64.8 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0001	23	South Lakes Stream Restoration	10/1/2014	-77.336585	38.932076	Urban Stream Restoration	37.23	19.79	17.43	\$646,509	660	4,401.62	24,318.36	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 660 LF, Average Stream Bank Height: 1.38 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF9045E	25	Difficult Run Tributary at Oakton Estates (DF9045)	6/26/2015	-77.350268	38.877995	Urban Stream Restoration	55.97	10.65	45.33	\$337,000	300	6,524.14	36,045.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 300 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	Difficult Run
CU9214A	34	Flatlick Phase I	12/8/2016	-77.423793	38.887072	Urban Stream Restoration	2,417.60	831.78	1,585.82	\$1,725,604	1772	69,107.61	381,809.99	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 2600 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181	Cub Run
DF82-0008	38	Colvin Run Ph I	8/9/2017	-77.311688	38.965054	Urban Stream Restoration	2,776.59	947.96	1,828.63	\$3,041,000	2175	153,126.00	846,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 846 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 30.8 ft	Difficult Run
				-77.314909	38.963992	Urban Stream Restoration					110	3,077.00	17,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 17 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 4.6 ft	Difficult Run
				-77.313468	38.964642	Urban Stream Restoration					350	11,403.00	63,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 63 tons/yr, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 4 ft	Difficult Run
	42	Wolftrap Creek Phase 2	10/18/2017	-77.246262	38.905770	Urban Stream Restoration	693.74	268.15	425.59	\$890,000	1020	45,777.60	252,914.92	CBP Urban Stream Restoration Interim Approved Removal Rates; Sediment Delivery Ratio:0.181	Difficult Run
<b>Subtotal:</b>							<b>17,447.65</b>	<b>6,914.80</b>	<b>10,532.85</b>	<b>\$ 12,788,378</b>	<b>14,995</b>	<b>511,522.97</b>	<b>2,826,093.80</b>		



Stream Restoration

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Restored Length (LF)	Estimated Amount of TSS Reduction (lbs/yr)		Pollutant Reduction Calculation Method	Watershed
												With Sediment Delivery Ratio	Without Sediment Delivery Ratio*		
<b>Projects Completed in Addition to Action Plan Projects</b>															
	54	Stone Mill Court Reach 2	4/24/2018	-77.342058	38.879321	Outfall Restoration	32.96	7.76	25.20	\$360,874	262.8	5,084.00	28,088.40	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 263 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	Difficult Run
CU-9214	55	Flatlick Ph II	4/26/2018	-77.434525	38.881297	Urban Stream Restoration	3,331.06	1,117.71	2,213.35	\$4,874,194	3560	138,323.95	764,220.72	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 4400 LF, Average Stream Bank Height: 5.5 ft, Sediment Delivery Ratio: 0.181; Protocol 2 - Average Stream Bank Width: 46 ft	Cub Run
						Urban Stream Restoration					340				
						Urban Stream Restoration					175				
						Urban Stream Restoration					200				
DF82-03	56	Robinson, PCL 19 @ 0723DP (DF82-03)	5/22/2018	-77.293272	38.970800	Outfall Restoration	34.33	5.08	29.25	\$395,000	260	1,256.50	6,942.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 260 LF, Average Stream Bank Height: 1.0 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0014	59	Lake Martin Tributaries	10/23/2018	-77.341165	38.88487	Outfall Restoration	29.48	5.24	24.24	\$1,747,968	1363	36,268.39	200,377.85	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 175 tons/yr, Sediment Delivery Ratio: 0.181, Protocol 4 - a RSC with 6,534 cf of runoff treated	Difficult Run
	62	Innisvale Drive Outfall Restoration	12/7/2018	-77.354019	38.803831	Outfall Restoration	17.18	3.13	14.05	\$495,616	475	7,966.71	44,014.97	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 471 LF, Average Stream Bank Height: 3.5 ft, Sediment Delivery Ratio: 0.181	Popes Head Creek
1250DP	66	Browns Chapel Pond & Outfall Improvement	4/20/2019	-77.307614	38.96985	Outfall Restoration	91.58	22.42	69.16	\$262,518	145	5,132.33	28,355.41	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 180 LF, Average Stream Bank Height: 5.9 ft, Sediment Delivery Ratio: 0.181	Difficult Run
DF82-0007		Difficult Run Tributary @ Brittenford Drive	3/1/2020	-77.297957	38.943905	Urban Stream Restoration	459.20	112.42	346.78	\$4,781,000	5402	631,206.73	3,487,330.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 3487.33 tons/yr, Average Stream Bank Height: 4.7 ft , Protocol 2 - Restored Length 5486 lf, Average Stream Bank Width: 3.9 ft, Sediment Delivery Ratio: 0.181	Difficult Run
400-C40101		Brevity Drive Outfall	11/27/2019	-77.30877	38.98328	Outfall Restoration	88.90	14.20	74.70	\$622,839	540	15,657.95	86,508.01	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 540 LF, Average Stream Bank Height: 6 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Four Stairs Court & Sandy Folly Court Outfall	11/8/2019	-77.32923	38.809097	Outfall Restoration	27.60	4.80	22.80	\$572,842	1070	23,776.88	131,363.98	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1070 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	Popes Head Creek
		Flatlick Phill	4/10/2020	-77.448606	38.878373	Urban Stream Restora	3,989.40	1,333.50	2,655.9	\$3,154,231	3,895	78,735.00	435,000.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 435 tons/yr, Average Stream Bank Height: 4.6 ft , Protocol 2 - Restored Length 3794 lf, Average Stream Bank Width: 16.2 ft, Sediment Delivery Ratio: 0.181	Cub Run

Stream Restoration

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Restored Length (LF)	Estimated Amount of TSS Reduction (lbs/yr)		Pollutant Reduction Calculation Method	Watershed
												With Sediment Delivery Ratio	Without Sediment Delivery Ratio*		
<b>Projects Completed in Addition to Action Plan Projects</b>															
DF82-0005	73	Old Courthouse Spring Branch - Phase I @ Gosnell Road	1/29/2021	-77.247156	38.925587	Urban Stream Restora	369.25	259.69	109.6	\$7,022,060	3,236	82,333.00	454,878.45	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 454.88 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
		Snakeden Branch Tributary @ Lake Audubon	1/15/2021	-77.335564	38.929434	Urban Stream Restora	46.76	22.44	24.3	\$1,860,000	863	21,344.00	117,922.65	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 117.92 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
		Miller Heights Outfall	3/11/2021	-77.32549	38.888567	Outfall Restoration	31.00	5.89	25.1	\$272,345	403	9,251.00	51,110.50	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 403 LF, Average Stream Bank Height: 4.75 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Rockport Road	11/11/2020	-77.27333	38.913687	Outfall Restoration	39.70	13.10	26.6	\$441,909	378	14,614.00	80,740.33	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 378 LF, Average Stream Bank Height: 8 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Brooktrail Court	6/10/2021	-77.28009	38.928154	Outfall Restoration	39.11	7.04	32.1	\$310,026	300	5,799.00	32,038.67	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 300 LF, Average Stream Bank Height: 4 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Piney Branch	3/25/2021	-77.111759	38.814183	Urban Stream Restora	688.50	249.80	438.7	\$1,600,000	1,525	104,039.00	574,801.10	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 574.81 tons/yr, Sediment Delivery Ratio: 0.181	Difficult Run
		Leigh Meadow & Towlston	10/29/2021	-77.27115	38.95121	Urban Stream Restora	117.87	41.42	76.5	\$2,034,202	1,687	83,958.66	463,860.00	CBP Urban Stream Restoration Expert Panel: Protocol 1 -BANCS Sediment Load Estimate: 463.86 tons/yr, Average Stream Bank Height: 6.2 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Leigh Meadow & Towlston	10/29/2021	-77.27115	38.95121	Outfall Restoration	9.55	2.73	6.8	\$757,460	187	3,732.68	20,622.54	CBP Urban Stream Restoration Expert Panel: Protocol 4 -Proposed treatment volume: 26,764 cf, Sediment Delivery Ratio: 0.181	Difficult Run
		Chestnut Burr Court	10/17/2021	-77.34433	38.930976	Outfall Restoration	10.70	4.60	6.1	\$371,461	654	8,728.86	48,225.75	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 654 LF, Average Stream Bank Height: 3 ft, Sediment Delivery Ratio: 0.181	Difficult Run
		Shouse Village	3/11/2022	-77.27026	38.944231	Outfall Restoration	117.93	37.69	80.2	\$1,040,846	1,035	22,508	124,355.25	CBP Urban Stream Restoration Expert Panel: Protocol 1 -Existing Length: 1035 LF, Average Stream Bank Height: 4.5 ft, Sediment Delivery Ratio: 0.181	Difficult Run
<b>Subtotal:</b>							<b>9,572.06</b>	<b>3,270.65</b>	<b>6,301.44</b>	<b>\$32,977,391</b>	<b>27,956.00</b>	<b>1,299,716.94</b>	<b>7,180,756.58</b>		

\* Sediment delivery ratio does not apply to local TMDLs

QA/QC Corrections - Some projects included Bay baseline adjustments which were removed to keep reporting consistent  
Project completed during the reporting period

Credit Summary by Watershed (lb/yr)	With Sediment Delivery Ratio	Without Sediment Delivery Ratio*
Cub Run Complete	438,533.99	2,422,839.72
Cub Run Under Construction	-	-
Little Rocky RunRun Complete	-	-
Little Rocky Run Under Construction	-	-
<b>Total Bull Run</b>	<b>438,533.99</b>	<b>2,422,839.72</b>
Difficult Run Complete	1,340,962.33	7,408,631.71
Difficult Run Under Construction	-	-
<b>Total Difficult Run</b>	<b>1,340,962.33</b>	<b>7,408,631.71</b>
Popes Head Creek Complete	31,743.59	175,378.95
Popes Head Creek Under Construction	-	-
<b>Total Popes Head Creek</b>	<b>31,743.59</b>	<b>175,378.95</b>

**Structural Retrofits**

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Estimated Total TSS Reduction (lbs/yr)*	Pollutant Reduction Calculation Method	Watershed
<b>Benthic TMDL Action Plan Project Completion Status - Stormwater Retrofits</b>													
CU9124	1	Willoughby's Ridge Pond Retrofit(0944DP)	9/4/2009	-77.429377	38.845618	Extended Detention Pond	17.03	7.82	9.21	\$277,100	5,389.42	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
CU9125	2	Englewood Mews Pond Retrofit(1396DP)	9/4/2009	-77.428622	38.846256	Extended Detention Pond	46.42	21.63	24.79	\$297,300	14,846.87	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
CU9143	5	Fair Ridge Richmond American Pond	12/15/2009	-77.374687	38.871101	Constructed Wetland	41.50	31.22	10.28	\$390,400	18,053.73	CBP Retrofits Expert Panel, ST, 0.42 inches of runoff treated	Cub Run
CU9193	6	Foxfield Pond D	12/15/2009	-77.405292	38.89487	Extended Detention Pond	111.00	22.77	88.23	\$271,800	21,090.90	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
CU9142	7	Fair Ridge Pond A	12/15/2009	-77.370964	38.870001	Constructed Wetland	65.04	53.08	11.96	\$366,800	32,138.12	CBP Established Efficiency, Wet Ponds and Wetlands	Cub Run
PH9890	16	University Square	12/22/2010	-77.323737	38.838279	Extended Detention Pond	18.40	5.80	12.60	\$178,100	4,504.37	CBP Established Efficiency, Dry Extended Detention Ponds	Popes Head Creek
BN9105	21	Springhill Rec Center	7/15/2011	-77.227473	38.940809	Filtering Practices	0.10	0.10	-	\$39,000	93.71	CBP Established Efficiency, Filtering Practices	Bullneck Run
				-77.22833554	38.9406501	Permeable Pavement	0.40	0.40	-	\$76,100	345.80	CBP Retrofits Expert Panel, RR, 0.95 inches of runoff treated	Bullneck Run
				-77.227463	38.942894	Extended Detention Pond	14.10	8.04	6.06	\$56,200	5,239.89	CBP Established Efficiency, Dry Extended Detention Ponds	Bullneck Run
CU81-0003	22	Sequoia Section 2 Pond 1	8/1/2011	-77.440837	38.850177	Extended Detention Pond	92.25	30.00	62.25	\$486,264	23,041.58	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
PH81-0001	25	Barton Place Pond Retrofit (DEL 2011)	12/13/2011	-77.33245	38.806626	Wet Pond	65.92	24.39	41.53	\$192,000	18,946.16	CBP Retrofits Expert Panel, ST, 0.51 inches of runoff treated	Popes Head Creek
DF9143C46	29	Government Center Stormwater Retrofit	6/29/2012	-77.353366	38.853269	Constructed Wetland	4.28	3.12	1.16	\$50,000	3,071.89	CBP Retrofits Expert Panel, ST, 2.5 inches of runoff treated	Difficult Run
				-77.355078	38.852334	Constructed Wetland	45.35	25.85	19.50	\$275,000	25,193.45	CBP Retrofits Expert Panel, ST, 1.39 inches of runoff treated	Difficult Run
DF87-0003	32	Great Falls Nike Park #4	11/1/2012	-77.324875	38.992132	Infiltration	0.95	0.90	0.05	\$41,954	1,009.83	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
						Dry Swale	0.40	0.09	0.31	\$37,495	133.07	CBP Retrofits Expert Panel, RR, 2 inches of runoff treated	Difficult Run
						Infiltration	1.89	1.79	0.10	\$190,736	2,008.53	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
PH9190	33	Marymead Section 1 & 2	12/14/2012	-77.362382	38.84276	Constructed Wetland	50.20	6.53	43.67	\$427,000	9,723.70	CBP Retrofits Expert Panel, ST, 0.75 inches of runoff treated	Popes Head Creek
DF9143D47	34	Fairfax County Landbay C, Pond #4	3/20/2013	-77.355287	38.852875	Constructed Wetland	16.99	9.25	7.74	\$110,000	9,722.55	CBP Retrofits Expert Panel, ST, 2.31 inches of runoff treated	Difficult Run
CU9138	35	Fair Woods, Section 9, Pond 2	4/10/2013	-77.38609	38.877209	Extended Detention Pond	26.99	14.91	12.08	\$401,550	9,794.02	CBP Established Efficiency, Dry Extended Detention Ponds	Cub Run
PH9180B	36	Brentwood West	6/19/2013	-77.365386	38.837887	Extended Detention Pond	35.27	9.52	25.75	\$345,158	7,838.91	CBP Established Efficiency, Dry Extended Detention Ponds	Popes Head Creek
DF9031A7	38	Regional SWM Pond D-31	6/24/2013	-77.314594	38.892094	Extended Detention Pond	331.11	116.20	214.91	\$655,815	86,944.28	CBP Established Efficiency, Dry Extended Detention Ponds	Difficult Run
DF81-0006	45	Towlston Meadow (0371DP)	4/4/2014	-77.265751	38.949846	Constructed Wetland	26.00	8.00	18.00	\$266,751	6,267.48	CBP Established Efficiency, Wet Ponds and Wetlands	Difficult Run
DF87-0006	48	Oak Marr Rec Center Stormwater	8/1/2014	-77.316279	38.874842	Bioretention	0.95	0.75	0.20	\$128,366	441.28	CBP Retrofits Expert Panel, RR, 0.4 inches of runoff treated	Difficult Run
DF87-0001	51	Oakton Library	9/15/2014	-77.302299	-77.302299	Permeable Pavement	0.37	0.25	0.12	\$239,841	267.78	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	Difficult Run
				-77.30182	38.883805	Bioretention	0.91	0.67	0.24	\$67,545	454.84	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
				-77.301959	38.883783	Infiltration	0.50	0.42	0.08	\$37,113	480.72	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
CU87-0002	53	Fire and Rescue Training Academy II	9/27/2014	-77.37489023	38.8545573	Permeable Pavement	0.82	0.65	0.17	\$89,210	660.28	CBP Retrofits Expert Panel, RR, 1.94 inches of runoff treated	Cub Run
CU9186	55	Armfield Sec 5	11/15/2014	-77.418565	38.895334	Constructed Wetland	78.79	27.43	51.36	\$317,413	19,507.74	CBP Retrofits Expert Panel, ST, 0.43 inches of runoff treated	Cub Run
DF9045A6	62	Oakton Swim and Racquet Club (DF9045A6)	5/22/2015	-77.350396	-77.350396	Bioretention	22.70	3.74	18.96	\$90,120	4,242.65	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
				-77.350679	-77.350679	Bioretention	18.87	2.47	16.40	\$90,120	3,176.95	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
				-77.350653	-77.350653	Bioretention	5.32	2.18	3.14	\$90,120	1,708.02	CBP Established Efficiency, Bioretention C/D soils, underdrain	Difficult Run
DF9045F	66	Penderbrook (DF9045/0691DP)	3/8/2016	-77.362336	38.87771	Constructed Wetland	22.53	2.60	19.93	\$105,021	4,239.05	CBP Retrofits Expert Panel, ST, 0.79 inches of runoff treated	Difficult Run
CU9214A	69	Flatlick Phase I	12/8/2016	-77.422712	38.887882	Constructed Wetland	8.39	3.59	4.80	\$325,765	3,912.75	CBP Retrofits Expert Panel, ST, 1.87 inches of runoff treated	Cub Run

**Subtotal: 1,171.74 446.16 725.58 \$ 7,013,155 344,490.32**



Structural Retrofits

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Estimated Total TSS Reduction (lbs/yr)*	Pollutant Reduction Calculation Method	Watershed
<b>Projects Completed in Addition to Action Plan Projects</b>													
CU9711	3	Franklin Middle School	9/14/2009	-77.422277	38.90754	Constructed Wetland	54.40	10.10	44.30	\$556,479	11,415.78	CBP Retrofits Expert Panel, ST, 0.62 inches of runoff treated	Cub Run
				-77.422277	38.90754	Bioretention	1.41	1.09	0.32	\$72,000	1,010.02	CBP Retrofits Expert Panel, RR, 1.05 inches of runoff treated	Cub Run
DF87-0004B	31	Waples Mill ES Phase II	8/8/2012	-77.345172	-77.345172	Permeable Pavement	0.82	0.71	0.11	\$250,000	708.85	CBP Retrofits Expert Panel, RR, 1.92 inches of runoff treated	Difficult Run
DF	67	Terraset ES	12/15/2015	-77.343127	38.937057	Permeable Pavement	1.28	0.84	0.44	\$461,857	905.27	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Difficult Run
DF	67	Terraset ES	12/15/2015	-77.343622	38.935493	Permeable Pavement	0.69	0.35	0.34		400.69	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Difficult Run
BR8001-BR001	14	Weltman Estates	10/4/2010	-77.491502	38.83826	Extended Detention Pond	47.82	28.69	19.13	\$345,000	18,484.11	CBP Established Efficiency, Dry Extended Detention Ponds	Bull Run
DF87-0005	74	Sunrise Valley ES	9/1/2015	-77.3213	38.941291	Permeable Pavement	0.21	0.14	0.07	\$532,290	150.38	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	Difficult Run
				-77.320802	38.941418	Permeable Pavement	0.55	0.39	0.16		413.66	CBP Retrofits Expert Panel, RR, 2.5 inches of runoff treated	Difficult Run
				-77.319947	38.941094	Dry Swale	0.33	0.19	0.14		197.73	CBP Established Efficiency, Bioswale	Difficult Run
				-77.318977	38.939997	Infiltration	2.72	1.43	1.29		1,797.22	CBP Established Efficiency, Infiltration Practices w/o Sand, Veg.	Difficult Run
CU9807	76	Stringfellow Road - Park & Ride Stormwater Enhancements	5/11/2016	-77.40506	38.853782	Permeable Pavement	0.83	0.75	0.08	\$612,337	760.96	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.404792	38.854064	Permeable Pavement	0.32	0.29	0.03		292.55	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.405645	38.853421	Permeable Pavement	0.97	0.83	0.15		847.34	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.405548	38.854177	Permeable Pavement	0.41	0.36	0.05		370.04	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.405226	38.854651	Permeable Pavement	0.46	0.44	0.02		444.48	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.40434	38.853796	Filtering Practices	0.03	0.03	0.00		23.73	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
				-77.404202	38.853338	Filtering Practices	0.03	0.03	0.00		28.40	CBP Retrofits Expert Panel RR, 2.5 inches of runoff treated	Cub Run
CU87-0001	81	West Ox Bus Operations Center Expansion (CU87-0001)	7/21/2017	-77.377953	38.84816	Permeable Pavement	0.08	0.08	-	\$5,501	73.26	CBP Retrofits Expert Panel RR, 1.21 inches of runoff treated	Cub Run
						Permeable Pavement	0.42	0.42	-	\$83,249	380.46	CBP Retrofits Expert Panel RR, 1.17 inches of runoff treated	Cub Run
	88	Public Safety Headquarters Building Stormwater Enhancements	8/30/2017	-77.362589	38.857386	Dry Swale	3.10	2.54	0.56	\$264,636	2,458.08	CBP Established Efficiency, Bioswale	Difficult Run
						Dry Swale	0.26	0.20	0.06	\$22,195	194.26	CBP Established Efficiency, Bioswale	Difficult Run
						Permeable Pavement	0.24	0.24	-	\$91,300	210.59	CBP Retrofits Expert Panel RR, 1.0 inches of runoff treated	Difficult Run
						Vegetated Roof	0.53	0.53	-	\$315,147	465.05	CBP Retrofits Expert Panel, RR, 1.0 inches of runoff treated	Difficult Run
						Rainwater Harvesting	0.61	0.61	-	\$366,143	582.95	CBP Retrofits Expert Panel, RR, 1.51 inches of runoff treated	Difficult Run
						Biofilter # 1	0.09	0.02	0.07	\$50,503	25.01	CBP Retrofits Expert Panel, ST, 1.0 inches of runoff treated	Difficult Run
						Biofilter # 2	0.26	0.15	0.11	\$145,897	136.36	CBP Retrofits Expert Panel, ST, 1.0 inches of runoff treated	Difficult Run
DF9143H51		Herrity Pond Retrofit	8/8/2018	-77.361313	38.857138	Wet Pond	33.9	17.43	16.47	\$820,000	412.29	CBP Retrofits Expert Panel RR, 0.48 inches of runoff treated	Difficult Run
LR81-0001	91	Centreville Greene Pond 1 (LR81-0001)	2/4/2019	-77.413883	38.83876	Constructed Wetland	57.52	24.22	33.29	\$384,937	4,289.40	CBP Retrofits Expert Panel, ST, 0.09 inches of runoff treated	Little Rocky Run
LR81-0002		Centreville Greene Pond 2 (LR81-0002)	2/4/2019	-77.416088	38.836768	Constructed Wetland	27.96	16.43	11.53	\$361,107	4,574.42	CBP Retrofits Expert Panel ST, 0.15 inches of runoff treated	Little Rocky Run
1250DP		Browns Chapel Pond & Outfall Improvement	4/20/2019	-77.308138	38.970711	Extended Detention Pond	81.66	20.07	61.59	\$262,518	2,693.90	CBP Retrofits Expert Panel, ST curve (wet ponds) for forebay only, 0.14 inches of runoff treated	Difficult Run
		Langston Hughes MS	6/30/2020	-77.338308	38.934725	Infiltration	2	1.9	0.1	\$294,000	2,130.93	CBEE Infiltration w/o sand	Difficult Run
		Willow Springs ES	8/16/2019	-77.37839	38.831059	Filtering Practices	7.36	1.24	6.12	\$534,000	2,022.67	CBEE Filtering Practices	Popes Head Creek

**Structural Retrofits**

PRJ_ID	#	Project Name	Substantial Completion	Longitude	Latitude	Type of Project or BMP	Acres Treated (Ac)	Impervious Acres Treated (Ac)	Pervious Acres Treated (Ac)	Estimated Cost (\$)	Estimated Total TSS Reduction (lbs/yr)*	Pollutant Reduction Calculation Method	Watershed
<b>Projects Completed in Addition to Action Plan Projects</b>													
		Herrity Concrete Fountain Replacement	1/29/2021	-77.3625	38.8565	Rainwater Harvesting	2.2	1.87	0.33	\$321,750	697.00	VA Rainwater Harvesting Spreadsheet	Difficult Run
		Herrity Concrete Fountain Replacement	1/29/2021	-77.3625	38.8565	Bioretention	0.1	0.08	0.02	\$321,750	53.67	CBEE Bioretention C/D soils, underdrain	Difficult Run
		Foulger and Boldog	1/15/2021	-77.390302	38.847329	Wet Pond	51.3	14.56	41.85	\$72,000	2,765.80	CBP Retrofits Expert Panel, ST curve, for 0.67 inches of runoff w/ forebay	Little Rocky Run
		Leigh Meadow & Towlston	10/29/2021	-77.269100	38.951740	Filtering Practices	19.42	6.73	12.69	\$407,202	4,081.63	CBEE Filtering Practices	Difficult Run
		Sully Basins	4/19/2022	-77.457500	38.846900	Constructed Wetland	40.35	15.03	25.32	\$1,333,613	7,785.31	CBP Retrofits Expert Panel, ST curve, for 0.3 inches of runoff	Cub Run
		Sully Basins	4/19/2022	-77.458200	38.847500	Constructed Wetland	59.48	30.70	28.78	\$1,345,572	11,473.79	CBP Retrofits Expert Panel, ST curve, for 0.2 inches of runoff	Cub Run
		Sully Basins	4/19/2022	-77.459400	38.847500	Constructed Wetland	7.49	3.04	4.45	\$546,437	1,961.24	CBP Retrofits Expert Panel, ST curve, for 0.4 inches of runoff	Cub Run
<b>Subtotal:</b>							<b>509.62</b>	<b>204.74</b>	<b>309.98</b>	<b>11,179,419.26</b>	<b>87,719.29</b>		

\* Adjustments for baseline do not apply to local TMDLs

Originally identified in Difficult Run in TMDL Action Plan - not included on tracking ledger  
 Added FCPS Projects  
 Corrected watershed  
 Project completed during the reporting period or previously unreported

Total Credit Summary by Watershed	Estimated TSS Reduction (lb/yr)*
Bull Run Complete	18,484.11
Bull Run Under Construction	-
<b>Total Bull Run</b>	<b>18,484.11</b>
Cub Run Complete	185,302.78
Cub Run Under Construction	-
<b>Total Cub Run</b>	<b>185,302.78</b>
Little Rocky Run Complete	11,629.62
Little Rocky Run Under Construction	-
<b>Total Little Rocky Run</b>	<b>11,629.62</b>
Difficult Run Complete	168,077.89
Difficult Run Under Construction	-
<b>Total Difficult Run</b>	<b>168,077.89</b>
Popes Head Creek Complete	43,035.81
Popes Head Creek Under Construction	-
<b>Total Popes Head Creek</b>	<b>43,035.81</b>

Fairfax County 2022 MS4 Program Plan and Annual Report

# Appendix R18

Summary of Program Effectiveness

VSMP Permit Number VA0088587  
9-30-2022



Fairfax County 2022 MS4 Program Plan and Annual Report  
Appendix R18

The purpose of this table is to illustrate how each permit element is assessing the effectiveness of the programs put in place to ensure compliance. Evaluation of program elements for effectiveness is a continuous process as implementation occurs. Staff meets on an annual basis to review and evaluate the effectiveness of the MS4 program.

<b>MS4 Action ID</b>	<b>Permit Element</b>	<b>Description of Assessment</b>	<b>Outcome</b>
A.2.	Permittee Responsibilities	The county reviews the roles and responsibilities section of the MS4 Program Plan annually to verify that it is accurate.	Complete – No changes from FY21.
A.3.	Legal Authority	The county reviews its ordinances annually to determine if any changes are needed to implement the MS4 Program Plan.	Complete – No change from FY21.
A.4.	MS4 Program Resources	The county reviews its budget annually to ensure that it has adequate resources to implement the MS4 Program Plan.	Complete – MS4 Program Plan budget is adequate.
A.5	Permit Maintenance Fees		Complete – submitted annually.
A.6.	MS4 Program Plan		Complete – the county maintains its MS4 Program Plan on its website.
A.7.	MS4 Program Review and Updates	The county reviews the MS4 Program Plan annually as required.	Complete – minor modifications to the Program Plan are documented in the annual report.
B.1.	Planning		Complete – the summary of potential projects was submitted as required.
B.2.a.	Construction Site Runoff and Post Construction Runoff from Areas of New Development and Development on Prior Developed Lands	The county conducts a needs assessment annually to provide supplemental training for plan reviewers and site inspectors.	Fairfax County developed a Web GIS solution to streamline the management of site-related construction complaints. The system enables managers, inspectors, administrative staff and the general public to seamlessly process and resolve complaints efficiently.
B.2.b.	Retrofitting on Prior Developed Lands	This permit element is assessed by ensuring the county has completed 30 of the projects	Complete – 30 projects constructed.

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		that were submitted in compliance with Part.I.B.1 of the permit.	
B.2.c.	Roadways	An annual review of the required SOPs is conducted to assess accuracy. Also, the county maintains an updated list of roadways, parking lots, and streets that are treated and not treated. This list is refreshed annually.	Complete – the annual review resulted in revisions to the SOPs to resolve overlaps and to ensure consistency with the county facility SWPPPs. The updated SOPs are included as a Program Plan appendix. The county also improved the process in which staff were receiving the SOPs to ensure full implementation of the SOPs at county facilities.
B.2.d.	Pesticide, Herbicide, and Fertilizer Application	The county annually reviews the guideline SOP, as well as the status of implementation of NMPs.	Complete – The county convened a workgroup that generated a county-wide GIS layer for ‘Ecologically Sensitive Sites’ that will be available to certified Nutrient Management Planners for inclusion in NMPs. Also, Neighborhood and Community Services modified web content and permit application language to include language to confirm that user groups must comply with state regulations related to PHF application. The county improved the process to incorporate FCPA NMP GIS data into the County’s larger MS4 tracking system.
B.2.e.	Illicit Discharges and Improper Disposal	<p>The program is pro-active and works to ensure county processes facilitate enforcement of the stormwater ordinance.</p> <p>The program is evaluated based on satisfactory closeout of reported cases in timely manner by follow-up inspections.</p>	<p>Staff continued to implement the multiple-agency MOU to ensure the plan review process identifies cooling towers and ensures proper permitting.</p> <p>As a preventive measure, staff conducted follow up inspections for a third year of commercial lots where road salt had been improperly</p>

MS4 Action ID	Permit Element	Description of Assessment	Outcome
			<p>stored that were originally identified in FY2019. Based on corrective action notices, there have been less issued since this effort took place.</p> <p>The county assessed non-IHRR convenience stores to reduce potential stormwater runoff. Through this analysis, the county determined that the convenience stores typically did not have potential to discharge contaminants into stormwater.</p>
B.2.f.	Spill Prevention and Response	The county evaluates incidents occurring over the reporting period to determine if program changes are needed or if additional training on spill response is required.	Complete – no changes to program. To make the data collection more efficient, the county developed an automated report for the MS4 Coordination Section to receive automatic updates from FRD’s dispatch and tracking system.
B.2.g.	Industrial & High Risk Runoff	The program is evaluated annually against performance goals (number of inspections, updated inventory of potential IHRR facilities) documented in SOPs.	The county made updates to the SOP to help identify potential polluters.
B.2.h.	Stormwater Infrastructure Management	<p>The county reviews its Post Construction Stormwater Inspection and Maintenance Policies and Procedures for stormwater management facilities and Best Management Practices annually and assesses the following performance metrics:</p> <p>Percentage of Public Facility Inventory inspections completed</p> <p>Percentage of Private Facility Inventory inspections completed</p>	<p>Stormwater facility and conveyance system inspections are on track to meet the inspection schedule specified in the MS4 Program Plan with appropriate follow-up. The county has invested in a modernized asset management system and is in the process of updating and improving the way that infrastructure inspections and maintenance are implemented, tracked, and reported.</p> <p>The county is implementing a stream restoration inspection</p>

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		<p>Number of Enforcement Actions brought against the Inspection Program from regulators (EPA or DEQ)</p> <p>The county assesses the conveyance piece of the permit element by tracking the identification and elimination of “unauthorized intrusions” into the MS4, by tracking responses to drainage complaints, and annually assessing progress toward the program goal of inspecting 15% of the MS4.</p> <p>On an annual basis, the MS4 service area is reviewed and updated based on infrastructure additions and comments by field staff (monitoring programs and IDID) to improve accuracy of stormwater assets in GIS.</p>	<p>SOP and is in the process of enhancing our GIS assets to facilitate and track inspection and maintenance details.</p> <p>Elimination of “unauthorized intrusions” and response to drainage complaints continue to be performed in a timely fashion.</p> <p>The MS4 system GIS data layers were updated based on new infrastructure information and comments provided by Stormwater staff.</p>
B.2.i.	County Facilities	<p>The SWPPP Program manager conducts an annual inspection to ensure SWPPP documents are up to date and that inspections and trainings are conducted as specified.</p> <p>The Stormdrain Marking Inspection SOP was updated to ensure storm drain labels are assessed and installed at HPMF facilities and on permittee properties with greater than 2-acres of impervious surface.</p>	<p>Site managers at several facilities have started using Work Order Management (WOM) systems to trigger quarterly inspections and inform upper management on completion of assignment. The remainder of HPMF facilities are in the process of implementing similar procedures.</p> <p>The project team is in the process of implementing the site selection process to identify facilities to inspect in FY23.</p>
B.2.j.	Public Education/Participation	The county’s MS4 public education team meets annually to assess the status of outreach	The MS4 Public Education and Participation Team developed new categories and units for

MS4 Action ID	Permit Element	Description of Assessment	Outcome
		<p>for target audiences and to determine if additional resources are needed to complete MS4 Program Plan outreach activities.</p> <p>The county continues to coordinate with Clean Water Partners to assess trends in stormwater knowledge and behavior and preferences for receiving information.</p>	<p>engagements, so that the information could be better summarized and understood.</p> <p>In coordination with the DPWES website development team, Stormwater Management made significant revisions to its web content to facilitate reporting of stormwater management and pollution issues, streamline and organize educational topics, and provide better search results. Stormwater updated web content related to the illicit discharge and improper disposal program, car washing, swimming pool discharges, cooling tower discharges, and salt storage. Stormwater also created new publications including a fact sheet for food service vendors.</p> <p>Complete: The Clean Water Partner survey results have been provided as an appendix with a summary of the results.</p> <p>The county developed the Fairfax Environmental Educators Team (FEET) to establish a platform for educators within the county and externally to collaborate and learn from one another. Meetings are held on a monthly basis.</p>
B.2.k.	Training	<p>Trainings are evaluated annually to ensure they are still relevant, that the appropriate staff are trained as required, and to amend content based on feedback from attendees.</p>	<p>Complete: Fairfax County's Site Code Academy provides training classes on a variety of topics, such as stormwater management, site inspections for BMPs and E&amp;S controls, and</p>

MS4 Action ID	Permit Element	Description of Assessment	Outcome
			<p>associated regulatory requirements for inspectors, plan reviewers and other technical staff. The intent is to provide contact hours that can be applied to certifications and professional licenses and to enhance the county’s customer service efforts. Classes are developed based on the needs assessment and repeated throughout the year on an as-needed basis.</p> <p>Training assignments were developed in the County’s online training platform and automated reminders implemented to ensure staff is held accountable.</p> <p>The county has voluntarily incorporated Northern Virginia Salt Management Strategy recommendations into trainings for Winter Operations staff and management.</p>
B.2.1.	Water Quality Screening Programs	<p>The dry weather screening program SOP is assessed annually to confirm that outfall selection and screening procedures are effective in locating illicit discharges. The sampling staff also assess the coordination process with the IDID program to ensure illicit discharges are eliminated.</p> <p>The wet weather screening program SOP is evaluated annually for potential improvements to procedures and results are reviewed to identify and mitigate potential sources of pollution.</p>	<p>The dry weather screening program continues to be successful in locating illicit discharges that are eliminated in coordination with the IDID program. The screening program is working with the infrastructure inspection team and evaluating potential process improvements to inform outfalls to improve track downs of illicit connections to the storm sewer.</p> <p>Complete – Starting in October 2020, Fairfax County began piloting an updated, improved wet weather screening SOP at</p>



MS4 Action ID	Permit Element	Description of Assessment	Outcome
		The County began piloting changes to the wet weather screening program in October, 2020 with an updated, improved SOP.	two new sites, which modifies our selection protocol, adds new constituents, and begins using more actionable criteria for our inspectors. The County will monitor these new sites for five years to better quantify seasonal and interannual magnitudes and variability of pollutants entering the MS4. Samples were collected under both the old and updated SOP through June, 2021. The program fully transitioned to the updated wet weather screening SOP in July, 2021.
B.2.m.	Infrastructure Coordination	The county evaluates coordination with VDOT during the annual meeting. A focus of the meeting is how the county and VDOT can work together more effectively.	The county is exploring partnership projects to meet TMDL requirements. These meetings are held on a regional level, which allows for multiple jurisdictions to coordinate and communicate.
C.1	Biological Stream Monitoring	The county evaluates the program annually with a goal of assessing long term trends in the benthic macroinvertebrate community.	The county continues to gather data in compliance with the permit but does not yet have enough data to evaluate long-term trends at this time.
C.2.	In-Stream Monitoring	The county evaluates the program annually with a goal of assessing long term trends in stream water quality.	The county continues to gather data in compliance with the permit but does not have enough data to evaluate long-term trends at this time.
C.3.	Floatables Monitoring	The county evaluates the program annually with a goal of determining a loading rate of floatables from the MS4 to streams in the county.	The Floatables Monitoring Program SOP was updated to include a methodology to identify additional sites to be monitored, with the goal of improving the confidence in observations made at the compliance sites currently being monitored.

<b>MS4 Action ID</b>	<b>Permit Element</b>	<b>Description of Assessment</b>	<b>Outcome</b>
C.4.	Structural and Source Controls Compliance Monitoring and Tracking	The county will annually evaluate its process for updating the asset management system and make improvements as needed.	Complete The county has selected a new Asset Management System and is in the process of implementing the IT solution. Until the new system is fully tested and approve, the County will continue to use our existing work order management system.
D.1.	Chesapeake Bay Special Condition	The county implements and tracks projects to reduce nitrogen, phosphorus, and total suspended sediments. Pollutant reduction progress is evaluated against TMDL reduction goals.	Complete – the county has met the reduction goals in the Chesapeake Bay Special Condition. The county continues to implement and track projects to document progress towards meeting future Chesapeake Bay permit requirements and also complete project verification requirements.
D.2.	TMDL Action Plans other than the Chesapeake Bay TMDL	Each of the Local TMDL Action Plans contains a section on assessment of effectiveness.	<p>Bacteria: The county conducts dog park assessments to evaluate effectiveness of controls – controls appeared to be effective in the reporting period. Public education effectiveness is assessed through the Clean Water Partners survey.</p> <p>Benthic: Progress towards meeting sediment reduction goals is tracked and reported in the annual report.</p> <p>PCB: Complete - Educational outreach materials appropriate for industrial and high-risk runoff facilities were developed in partnership with NVRC and distributed to facilities.</p>

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<b>MS4 Action ID</b>	<b>Permit Element</b>	<b>Description of Assessment</b>	<b>Outcome</b>
			The county has been actively participating and voluntarily implementing components of the Northern Virginia Salt Management Strategy. The county will develop a Chloride TMDL Action Plan in accordance revised/reissued permit language.